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ABSTRACT

A field test examined the validity of the "Interdisciplinary Cooperative Education Curriculum Manual." (Among those topics covered in the manual are the following: vocational student organizations, leadership, civic responsibility, health and safety, human relations, communications, resource management, consumer skills, consumer law, career planning, job search strategies, and arithmetic.) Twenty-six Oklahoma vocational, agriculture, and home economics teachers submitted between one and no units each (a total of 116 units), representing the work of 590 students. In addition, instructors provided comments on the units and suggested changes in them. Item analyses were made on the tests, including frequency counts of the number of correct answers and the percentage of students having a correct answer on a given item. Identification was made of those concepts on which 20 percent or more of the students were not achieving. Because over one-half of the units fell below the arbitrarily set standard of 80 percent, the manual warrants further study to determine what weaknesses exist--whether in the presentation of the concepts as written or as taught or in the students' inability to comprehend the more abstract concepts. (Teacher comments on the manual and item-by-item test results are included.) (MN)

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VALIDATION OF INTERDISCIPLINARY COOPERATIVE EDUCATION CURRICULUM MANUAL

Sheila D. Stone

U.S. DEPARTMENT OF EDUCATION
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ABSTRACT

This report is the result of a field test of Interdisciplinary Cooperative Education curriculum materials developed and published by the Curriculum and Instructional Materials Center, Oklahoma State Department of Vocational and Technical Education. The results and conclusions reported in the study relate to student achievement and teacher evaluation and comments for each unit of the manual.

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INTRODUCTION

The Curriculum and Instructional Materials Center (CIMC) at the Oklahoma State Department of Vocational and Technical Education is recognized nationwide as one of the leaders in curriculum development. The CIMC has developed a large number of curriculum manuals in the past decade. These manuals have been standardized in format and are used by curriculum centers and instructors throughout the United States and in several countries.

Because teachers need to have immediate access to good curriculum materials, the CIMC developmental processes have not included a field test of materials before they are released for sale to the schools. Advisory committees composed of vocational teachers, representatives from business and industry, teacher-educators, the curriculum specialist/writer, and state and district supervisors knowledgable in the particular occupational areas are used extensively throughout the developmental cycle to ensure the validity of the content. Past experience and feedback from teachers have given validity to the format and to the usability of the materials by both students and teachers.

This was one of a series of studies conducted to determine validity in terms of student ability to attain the performance-based objectives of the curriculum. The purpose of this study was to validate the Oklahoma CIMC's Interdisciplinary Cooperative Education curriculum manual.

DESIGN AND METHODOLOGY

Names of the Oklahoma Interdisciplinary Cooperative Education (ICE) teacher-coordinators were obtained from the ICE state coordinator at the State Department of Vocational and Technical Education. In addition, names of home economics (HERO) and agriculture (VAOT) instructors who were teaching cooperative programs were obtained from the Home Economics and Agriculture Divisions. Purchasers of the Interdisciplinary Cooperative Education manual were also obtained from the Curriculum and Instructional Materials Center. Letters were sent to these instructors requesting that they indicate which units of the ICE manual they planned to teach during the 1979-1980 school year and the approximate dates the units would be taught. A copy of the table of contents was enclosed for their convenience in checking the units. Responses were tabulated to identify those units which would be taught early in the school year.

Twenty-nine respondents were telephoned to ascertain if they would participate in the field test and all agreed to help. A letter was then sent to each instructor explaining the field test procedures and listing the units that particular instructor had been assigned to field test. The instructors were also encouraged to send other unit tests if desired.

Each instructor collected the student achievement data in the following manner. The performance-based test which accompanied each unit in the manual was administered by the instructor to each student upon completion of the unit. The tests were graded item by item; i.e., the teacher indicated on the students' tests whether each test item was answered correctly or incorrectly. The instructor was free to add or delete test items, weight the items for a total score, or use any other procedures normally used in testing. However, the Research Unit considered only the items on the unit tests. The student's performance on each assignment sheet was also to be recorded on the unit test.

Evaluation forms were provided so that the instructors could comment on the various components of the unit and on changes that needed to be made. Criticisms and suggestions were encouraged. Copies of the correspondence and unit evaluation forms are included in the appendix.

As each unit was completed, the teacher submitted the unit test and evaluation form to the Research Unit. Data were key-punched and the tests were returned to the teacher. Item analyses were made on the tests; they included frequency counts of the number of correct answers and the percentage of students having a correct answer on a given item. The results were used to help identify those items which the students had difficulty achieving.

Three of the twenty-nine instructors who originally agreed to participate were unable to submit any unit tests. One instructor was too busy and did not follow the curriculum; two instructors said they would send their assigned units in at the end of the year but failed to do so. Table 1 lists the final data collection results and indicates the number of students using the Interdisciplinary Cooperative Education manual at each school.

TABLE 1

PARTICIPANTS IN THE STUDY

School Number	Number of Students	Number of Units Submitted
2	27	5
3	12	6
5	11	2
6	28	1
7	19	3
8	21	9
9	22	6
10	21	6
11	33	8
12	12	7
13	26	5
14	15	3
15	33	6
16	39	5
17	45	5
18	34	5
19	20	4
20	12	4
21	22	1
22	4	3
24	37	4
25	35	2
26	8	2
27	12	4
28	35	7
29	7	3

UNIT TEST RESULTS

Each unit will be discussed in terms of student achievement. Teachers' comments will be presented at the end of this section. The unit tests and assignment sheets are broken down item by item in the appendix to show the percentage of correct responses. Forms showing student achievement on each item by school are available from the Oklahoma Research Unit.

It was determined arbitrarily that 80 percent of the students should answer the items correctly to demonstrate acceptable achievement of the concept being measured. Those concepts which students had the most difficulty achieving will be examined in the discussion of each unit. It is beyond the scope of the study to identify the reasons why students fail to achieve a given concept.

Orientation to Cooperative Programs

Overall achievement was 82.5 percent. Less than three-fourths of the students could match the term vocational education with its correct definition. Students at five of the six schools encountered difficulty when they tried to list a fourth benefit received from social security. Four of the instructors did not require their students to list grading criteria used in the cooperative program, both in the classroom and on the job. Approximately one-half of the students at the other two schools could list the criteria. These same four instructors did not require the students to list the rules and regulations to follow pertaining to attendance or dress codes at school and on the job. Responses at the other two schools ranged from 30.4 to 78.6 percent. Only one class was asked to list rules and regulations concerning discipline and other situations. Perhaps these two questions should be deleted when the manual is revised.

Only one instructor sent in the assignment sheet. All of the job records for the first two weeks were completed satisfactorily, but the job record for the third week was completed satisfactorily by only three-fourths of the students. Some of the instructors used their own forms; one instructor used the job records as given in the assignment sheet but had the students complete them using their own work experience.

Vocational Student Organizations and Parliamentary Procedure

Overall achievement was 77.6 percent. This was caused in part by the low achievement at two of the schools. Students at two of the schools could not list the suggested order of business. When selecting from a list those things that make a good chapter meeting, three statements

were selected incorrectly by 30 percent of the students. They thought a good chapter meeting should proceed according to the chairman's wishes, that all members should be involved in all committees, and that the meeting should proceed with maximum participation by the advisor(s). The students fell below the standard on more than one-half of the true-false statements concerning characteristics of various kinds of motions. Responses ranged from 73.3 to 60.0 percent on five of the seven statements related to basic parliamentary procedure rules. Less than 65 percent of the students could describe the procedure for handling guest speakers.

Four instructors did not respond as to whether the students conducted a business meeting using proper parliamentary procedure. A fifth instructor used Assignment Sheet #1 as a group activity but did not comment on the students' performance. Two classes did complete Assignment Sheet #1. Thirty percent of these students missed only one of the main motions--to give Christmas baskets. They averaged 83.8 percent on the assignment.

Leadership Development and Civic Responsibility

Overall achievement was 78.5 percent. One-fourth of the students thought that making quick, snap decisions in most cases demonstrated leadership potential; one-third of the students thought a good leader realized that his/her responsibility was to shoulder all duties and responsibilities. Except for these two misconceptions, the majority of the students were able to select the correct ways to demonstrate leadership potential. Matching autocratic, democratic, and free-rein styles of leadership to their correct descriptions proved difficult for the students in all instances but one. Over 87 percent of the students knew an autocratic leader does all of the planning, organizing, controlling, and coordinating. Responses on the other descriptions ranged from 59.8 to 79.3 percent correct. Over one-third of the students thought a leader could give orders, instructions, and directions most effectively by providing a lot of details. Almost 50 percent of the students felt that one could correct another person's mistakes most effectively by making remarks general. Responses fell below 80 percent on eleven of eighteen items when the students attempted to match roles found in groups to the correct descriptions. Listing ways a leader overcomes problem situations in a group elicited a range of responses from 59.8 to 74.7 percent correct. Perhaps if the question had been matching rather than listing or if a lesser number of situations were given, the students would have been more successful. Of course, one can argue that in "real life" the student faced with these situations will not have a list of options to follow but must rely entirely on her/his own intuition. Less than one-fourth of the students could list one common error made in objectively evaluating other persons. The achievement rate lowered as the students tried to name more than one. Responses ranged from 48.3 to 81.6 percent when the students matched forms of city government to the correct descriptions. The personality self-rating scale was not used at one school and was completed satisfactorily by students at a second school. There was no response from the other three instructors concerning its use in the classroom.

Health and Safety

This unit ranked highest in overall achievement with 88.6 percent correct responses. Almost one-half of the students thought a tourniquet should be wrapped twice around an extremity very tightly to stop bleeding caused by an accident. One-fourth of the students felt that a tourniquet should be applied immediately. These misconceptions could cause serious problems for the victim should these steps be taken and the students need to be retaught the correct methods until they are learned. When loss of life or limb is concerned, there is no room for error. One-third of the classes thought that squatting with knees in front and together, back bent forward, and arms extended was a proper lifting method. They also selected "lift side of material away from you" as a true statement about the proper lifting method. All seven schools fell below the 80 percent standard when the students selected "place front of chair against wall when standing on a chair" as a true statement about the proper methods of moving materials. In many cases, a slight word change caused the statement to be incorrect. The students may have only glanced at the statements and marked them without actually reading them. Five of the instructors did not comment on the use of the assignment sheet. One class did not use it. In a seventh class the majority of students satisfactorily discussed safety rules with their employer, some were not going to use it, and a smaller number were going to discuss the safety rules at a later date.

Human Relations and Self-Improvement

Overall achievement was 78.0 percent. The students had little trouble selecting reasons for human relations training except for one. More than one-third of the students did not know that more formality of behavior is generally required in business because an authority structure exists. Four statements about physical and emotional characteristics of personality caused some problems. One-fourth of the students did not select "physical characteristics must usually be accepted" and "physical characteristics may often be altered" as true. They may have been confused by what might appear contradictory statements. More students incorrectly chose "sometimes it is necessary to release emotions in a destructive way" and "it is hypocritical to always be polite and friendly if you don't like someone." The students might have answered according to how they felt rather than what the author chose to list as true. Approximately one-third to one-half of the students could not correctly name, list, or state the answers to six short-answer questions. This phenomenon was evident in five of the six schools field testing this unit. It is not known, however, whether the students were unable to write their thoughts on paper or whether the questions themselves were ambiguous. One-half of the students thought that people with little self-respect were self-centered. Individual school scores ranged from 27.3 to 77.4 percent on this one item. It is therefore evident that the item is perhaps too good of a distractor. Again the students fell below the 80 percent standard on contradictory statements. More than one-fourth of the students felt that in order to show respect for others, you should be aware of what others are saying, disregarding their feelings. Over one-third of the students did not think that responding to emotions first was a way of showing respect.

One class completed self-analyses and values assessment activities to their instructor's satisfaction. There was no response from the other instructors. Only 58.3 percent of the students at one school could satisfactorily develop a plan for self-improvement; there was no response from the others.

Relationships with Other People

Overall achievement was 87.7 percent. Students at three schools encountered difficulty when they attempted to list eight characteristics of a good employee. Overall, however, the students fell below the 80 percent standard on only the eighth characteristic. One-fourth of the students thought that one way they could get along with the supervisor was to impress the supervisor with their easier and better way of doing things. Four of the seven classes could not state two work rules related to punctuality. Between one-half and one-third of the students could not state two work rules related to poise or personal management.

Coping with Problems

This unit ranked second to last in overall achievement with 67.9 percent. Five of the seven test questions were short-answer items. Responses ranged from 60.3 to 71.8 percent when the students listed five kinds of adjustment mechanisms. Responses ranged from 44.9 to 64.1 percent when they listed the better ways to make adjustments. One-half of the students could list a second benefit of setting goals. Eighty percent of the students knew that checking the results was the last step in problem solving, but one-third of the students could not arrange the other steps in order. Responses ranging from 59.0 to 65.4 percent were elicited when the students arranged in order the levels of human needs.

Three instructors did not comment on their use of any of the assignment sheets. A fourth instructor did not comment on the use of Assignment Sheets #2 and #4; however, the students did complete Assignment Sheets #1 and #3. The mean score at the school for Assignment Sheet #1 was 42.9 percent. Only two of the adjustment mechanisms were matched correctly by over 80 percent of the students. These were "taking out feelings on another person, group, or thing" and "daydreaming about being like someone whose traits you admire." The rest of the responses ranged from 3.7 to 77.8 percent. The mean of Assignment Sheet #3 was 60.4 percent. Eighty percent of the students could answer the first two items correctly but responses on the remaining items fell below 73 percent.

Oral Communications

Overall achievement was 78.0 percent. The term communication had responses of less than 80 percent at three of the schools. Two of the classes brought the overall achievement below 80 percent when matching technical terms, acronym, and grapevine to the correct definitions. Slightly over one-half of the students incorrectly thought that the following behaviors were practical ways to improve communication skills: use technical terms, abbreviations, and acronyms to impress the listener

and to help the listener learn the terms, start right in with a thorough explanation so it only has to be said once, use a lot of gestures, and never use gestures because they are distracting. When selecting from a list the responsibilities of the speaker to overcome poor listening obstacles, 60 percent of the students incorrectly chose "repeating of the main points only at the end "as one of the correct statements. Nine of the twelve test items related to the responsibilities of the listener to overcome poor listening obstacles ranked below 80 percent achievement. Obviously, in many instances select-from-a-list statements have the words altered only slightly in order to make them incorrect. Although this may seem to be an effort to trick the students, it may in actuality be an attempt to encourage the students to concentrate on the task at hand. Test questions 6 through 10 were short-answer questions. At three of the schools the students overall achievement ranged from 0 to 75.0 percent; however, at a fourth school the students achieved between 97.2 and 100 percent. One instructor did not use questions 16, 17, and 18.

One-third of the students thought it was correct to ask "who is calling?" Almost one-half of the students did not realize a person should smile while he/she talks on the phone or that they should visualize the person on the other end of the line. They also did not understand that one should attract attention before resuming the call. Distinguishing between positive and negative gestures, expressions, and stances as shown in photographs created a low achievement rate of 20.3 to 78.0 percent with one exception. All four classes fell below 80 percent on two of the photographs, "k" and "l." Only 20 percent recognized photograph "l" as showing negative body language. Two of the classes analyzed voice qualities to the satisfaction of their instructors; the other two schools did not respond as to the use of the assignment sheet.

Written Communications

Overall achievement was 77.6 percent. One-third of the students thought the inside address included the name and address of the person writing the letter. Responses obtained when the students distinguished between good and poor business statements ranged from 49.3 to 79.5 percent. Between one-third to one-half of the students could not match modifiers, parallelism, and transitions to the correct descriptions. More than one-half of the students could not write the two forms for a second page heading nor could they identify the four basic letter styles. Sixty-four of the one hundred seventeen test items had overall responses below the 80 percent level, some as low as 47.9 percent. Perhaps if the unit was broken down into three or more sections, the students could grasp the concepts more easily. Many of the test questions were not used by individual instructors. Over 80 percent achievement was made on Assignment Sheet #1 by the students at three schools. When the students were asked to correct common sentence structure errors, 87 percent could correct the first sentence but responses of 39.1 to 78.3 percent were elicited on the other seven sentences. Two classes completed Assignment Sheet #3; only one of them completed it satisfactorily, however. Only one class was required to prepare two envelopes suitable for mailing, which they did satisfactorily. However, they could not write a memorandum.

Managing Resources

Overall achievement was 79.5 percent. Bond was the only term associated with investments that did not fall below the 80 percent achievement standard. The rest of the terms ranged from 51.6 to 75.8 percent in correct responses. Interpreting the stock market proved difficult for students at all of the field testing schools, resulting in a range of responses from 29.0 to 68.5 percent. The test question was presented differently than the stock market report in the information sheet. There were also errors on the stock market report as shown on the test. This would also tend to confuse the students.

Four of the instructors did not relate whether they had used the assignment sheets in the classrooms. One class did not evaluate a letter of complaint, 86 percent of the them could determine the values of taxes, and 92 percent could evaluate advertising. The mean achievement of four classes when interpreting the stock table was 55.8 percent. However, one class with an overall achievement of 14.0 percent was responsible for the low achievement. The students most often did not understand the net changes as shown at the extreme right of the stock market table.

Personal Banking Procedures

Overall achievement was 80.3 percent. The terms bank draft and cashier's check caused confusion at some of the schools. The students could name one advantage of a checking account, but the achievement rate lowered as more advantages were named. One instructor asked for only three advantages; another instructor asked for only five instead of the entire seven as required on the test. Less than two-thirds of the students could explain how to stop payment on a check. They also incorrectly stated that a post-date should be included on a check. According to the instructor at one school, 84.6 percent of the students could write a check; however, the mean for the school was 65.6 percent. Of the four instructors who stated the performance of their students, they reported an average of 65.8 percent could write a check. Less than 58 percent could reconcile a bank statement at three of the schools.

Obtaining and Using Credit and Loans

Overall achievement was 83.8 percent. When selecting true statements about guidelines for obtaining credit and loans, 53 percent of the students thought that income should be budgeted so that no more than 50 percent goes to paying off back debts. The 80 percent minimum was surpassed on only one-half of the loan descriptions, with the lowest achievement occurring on a mortgage loan, consolidated loan, and secured personal loan. Two misconceptions that the students had in regard to major types of credit extended by businesses were (1) that installment credit payments are usually made for short periods of time and (2) that no interest is charged on installment credit. Only two-thirds of the students knew that it is not easier to return merchandise if it has been paid for with a check or cash. Since students at all four schools had low achievement on this particular item, it may be misleading. Students at one school could evaluate credit and loan situations using set guidelines to the satisfaction of their instructor. There was no response from the other instructors.

Insurance

Overall achievement was 84.6 percent. Many of the students at four of the schools did not realize that insurance replaces value only. Two other misconceptions they held were that money can be saved by paying premiums monthly instead of annually and that premiums are higher for higher deductibles and a limited range of losses. Over 80 percent of the students could define worker's compensation and knew that it pays a percentage of earnings and accidental death benefits; however, one-third of the students thought it was optional and that it covered injury and illness both on and off the job. One-third of the students did not realize that homeowner's insurance coverage is in effect if the policy owner or a family member accidentally damages another's property. All of the possible answers to the test question related to characteristics of homeowners' insurance were correct and therefore the students might have been looking for what seemed to be the least correct answer. Types of auto insurance also seemed to confuse the students. There was no response from four instructors concerning the assignment sheet. A fifth instructor said that the students could satisfactorily describe insurance policies based on personal needs.

Buying a Car

Overall achievement was 76.4 percent. The most difficult test question asked the students to list one advantage and disadvantage of each auto loan agency. Responses ranged from 53.8 to 62.1 percent. Matching used car dealer locations to the correct characteristics of those locations posed a problem for one-half to one-fourth of the students. They also averaged below 80 percent on one-half of the test items dealing with clues to possible problems with the mechanical condition of a used car and the precautions to take when looking at a price and financing of a car. Although the teachers commented that many of the students were interested in the topic, the achievement rate does not seem to reflect that interest.

Basic Law for Business and Consumers

Overall achievement was 75.1 percent. Student achievement on twenty-six of the forty-five individual test items fell below the 80 percent standard. When selecting from a list things a renter should do under Oklahoma law, four items fell below 68 percent overall achievement at all of the participating schools. The students thought that a lease is automatically cancelled by not giving notice of a desire to return and that an agreement with an old lessor is not binding on a new lessor. Almost one-third of the students mistakenly thought a refund of the deposit should be received within five days of request; one-half of the students realized the refund should be received within ten days. One-half of the students could list one condition that is necessary in order to have a legal contract, but only one-third of them could list four. One-half of the students in all four schools switched the descriptions of corporation and cooperative types of business ownership. Only 42 percent of the students realized a business dissolves upon the death of one member of a partnership. Two-thirds of the students knew that a person under sixteen years old cannot work more than thirteen hours at

night in any gainful occupation. One-third of the students incorrectly thought that employment certificates are required for anyone under 20 years old in a gainful employment; the correct statement would have read anyone under 18 years old.

Only one instructor sent in the assignment sheet. The students averaged 91.9 percent with only two items falling below the 80 percent minimum. One-fourth of the students could not explain the three provisions relating to cancellation by the lessor as stated in the lease. Only 40 percent of the students could state whether the lessor had guaranteed a specific delivery date for the apartment.

Labor Unions

This unit had an overall achievement of 71.5 percent. Obviously, since only one large class field tested this unit, the results may be somewhat biased. Fourteen of the thirty-three terms related to labor unions fell below 80 percent in overall student achievement. Less than one-half of the students could list the types of labor unions or the types of issues discussed in collective bargaining. The students had little problem selecting arguments for and against labor unions with one exception--only two-thirds of them realized that interference with the decision-making authority of management was an argument against labor unions. Eighty-eight percent of the students knew that the first step to follow in the grievance process was to report the complaint to the shop steward/ess. However, the other steps were not followed in the correct sequence by a majority of the students, with responses ranging from 15.2 to 57.6 percent.

Economics of Free Enterprise

The third lowest student achievement (70.5 percent) was made on this unit. Sixty-eight of the ninety-six individual items fell below the minimum standard. The students could satisfactorily achieve only eighteen out of the twenty-seven terms related to economics. Obviously, if the terms themselves presented problems for the students there would be considerable confusion regarding the rest of the test questions. Less than two-thirds of the students could list one or more resources for production of goods and services. Sixty-one percent of the students did not know that a corporation requires a charter from the state which allows the company to conduct business transactions as a single person would. Approximately one-half of the students incorrectly thought that a branch store is centrally owned and operated, that a chain store is responsible for its own stock, and that conglomerate and sideline stores are two different names for the same type of store organization. The only channel of distribution that did not confuse most of the students was direct distribution. When matching economic goals of American people to descriptive statements, the students were able to achieve over 80 percent on only one item. The response range for the other items was 45.1 to 73.2 percent. Only one-third of the students could discuss the roles of government in the economy or the function of supply and demand schedules. The short-answer questions posed problems for the students at three of the schools. It is not known whether the students were

unable to express their thoughts on paper, the questions were ambiguous, or the students just did not know the answers. One instructor did not use test questions 4 "k" through "z." 5, 6, 7, or 10.

Students at one school applied economic principles to business situations and evaluated the economic impact of shoplifting to the satisfaction of the instructor. One item on the shoplifting assignment sheet caused very evident confusion. The students made 100 percent on every item except item 4, which asks how much inventory 300 stores will have to sell to overcome shoplifting costs. Only 9.1 percent of the students answered the item correctly. This could be caused by a lack of understanding of the mathematical concepts involved, but it still merits the attention of the teacher-coordinator or curriculum writer/specialist. There was no response for Assignment Sheet #3 nor was there any response from the other three instructors concerning any of the assignment sheets.

Career Planning

Overall achievement was 77.1 percent. Several terms presented some difficulty for the students: occupation, productivity, aptitude, ability, work, career, success. Many of the definitions could feasibly have been matched to other terms. It was more a matter of choosing by elimination. Less than one-half of the students could list three categories of jobs. When selecting true statements about how to ask for a raise, one-half incorrectly thought they should not follow up the interview by asking if a decision had been made because the employer may become angry. When selecting true statements about how to quit a job, 30 percent of the students thought they should tell the teacher-coordinator immediately after quitting their job. Only 60 percent realized they should plan to work over school breaks and at least until the end of the school year when a new co-op student could take their place. There was no response from either instructor concerning the assignment sheet.

Job Application and Interview

Overall achievement was 81.2 percent. One-third of the students thought private employment agencies usually collected a fee before employment is secured. Many of the students also thought, incorrectly, that public employment agencies charge placement fees for services, but did not realize that private employment agencies are controlled by state laws. Only 19 percent of the students did not select checking the employment-wanted column in the newspaper as a way a person looking for a job can use different sources of information. One instructor did not require the students to select job-related and personal guidelines for selecting clothes for the job interview. One-third of the students at the other two schools did not think that salary range and the age of the interviewer were important criteria. Eighty percent of the students could list one item which an applicant may need to prepare when applying for a job, but achievement went down as the students tried to list more items.

One class completed all of the assignment sheets but the instructor did not specify how well they did. Another class satisfactorily prepared a personal data sheet, completed a job application form, and completed a sample employment test. The only item which proved difficult on the sample employment test asked the students to circle the number that did not complete the regular sequence of numbers listed. There was no comment from the instructor on the use of the other assignment sheets. A third instructor gave no response on any of the assignments.

Whole Numbers

Overall achievement was 88.3 percent, with this unit ranking second highest. The terms dividend, quotient, minuend, divisor, product, and subtrahend caused problems for at least one-fourth of the students. One-fourth of the students had some difficulty multiplying a four-digit number by a three-digit number. They also had trouble dividing a four-digit number by a two-digit number.

According to the instructors, 75.0 percent of the students could solve vertical and horizontal addition problems at one school, 81.8 percent at another school, 60.0 percent at a third school, and 54.5 percent at a fourth. Overall, 69 percent of the students could solve vertical and horizontal addition problems. There was no response from two other instructors.

Even though the students were confused by the definition of the terms related to the parts of basic operations, they had no trouble matching the names of the parts to actual examples of problems on Assignment Sheet #1. The students encountered difficulty when adding columns of monetary values of from two to four digits. One-third of the students at all four schools could not divide 8507 by 29 because of the zero in the dividend. One-half of the students could not divide 26,679 by 27. The division problems the students missed most often had remainders in the quotients. They also had trouble dividing six digit numbers by three digit numbers. When adding vertical and horizontal columns of numbers, the students encountered the most difficulty when adding cash receipts of four-digits. Students at three of the schools could not obtain the same total for the vertical and horizontal columns.

Decimals

Overall achievement was 79.0 percent. One-half of the students could define decimals and caret. When asked to write the place value of each of the digits in the number 0.856132, the students obtained a low achievement of 65.3 to 71.4 correct responses. The students had no trouble rounding decimals to the nearest whole number, but only three-fourths could round them to the nearest tenth or hundredth, and only two-thirds could round decimals to the nearest thousandth. Less than 80 percent of the students could subtract a number containing tenths from one containing hundredths. Students at all six of the schools fell below 80 percent when they attempted to multiply hundredths and thousandths. Fewer than three-fourths of the students could divide whole numbers by decimals. The lowest achievement occurred when they attempted to divide decimals by 10, 100, and 1000.

The students encountered diificulty rounding decimals to hundredths and thousandths on the assignment sheet. Subtracting decimals from whole numbers and adding them was difficult also. Dividing whole numbers by decimals was difficult for the students on six of the ten problems; dividing decimals by whole numbers was difficult on four out of the six problems.

Fractions and Percents

Overall achievement was 77.4 percent. Between one-half and two-thirds of the students could write fractions as decimals and percents, percents as fractions and decimals, and decimals as fractions and percents. They could convert mixed numbers to improper fractions when the denominator was a one-digit number but fell below 69 percent achievement when converting to a two-digit denominator. When completing a conversion table, only 40 percent of the students could convert whole or mixed numbers to fractions. Two-thirds of the students could convert whole or mixed numbers to fractions. Two-thirds of the students could convert them to decimals and 70 percent could convert them to percentages. It is questionable whether changing a whole number such as 20 to a decimal (0.2) or a fraction (1/5) is logical. It would appear that 20 written as a decimal would be 20.0 and as a fraction would be 20/1. To be consistent with the rest of the chart in the information sheet, the 1 should be 100. One instructor did not require the students to identify parts of fractions as listed on Assignment Sheet #1. Changing fractions with denominators and numerators of two digits to equivalent fractions proved difficult for many of the students at three schools. They were able to express fractions as decimals on the assignment sheet, but more than one-third of the students could not express fractions as percents. Most of the assignment sheets did not pose much difficulty for the majority of the students.

Wages

The lowest student achievement (66.5 percent) was made on this unit. Responses ranged from 41.0 to 78.1 percent on the individual test items. Only one school had overall achievement above 80 percent. It is unknown why the students fared so poorly. The students did well on Assignment Sheet #1 with two exceptions. One-half of the students could not correctly figure wages for a total payroll figure. Barely two-thirds of the students could calculate the earnings in a story problem. One class was not required to complete one-half of the assignment sheet. Eight of the fifteen items on Assignment Sheet #2 fell below 80 percent, however. The students had problems figuring hourly wages with overtime pay.

Using Written Resources

Overall achievement was 86.6 percent. The only test question which fell below 80 percent asked the students to list information which may be found in a dictionary. Ninety percent of the students could list two items but achievement fell at least 20 percent on the remaining three. The students at the one participating school could find a book in the library and find information in a dictionary to the satisfaction of

their instructor. On Assignment Sheet #1 only one item fell below the 80 percent standard. Fifty-five percent of the students could not determine the subject heading a specific book was filed under using a main entry card. The students were not required to find three books in the library on specific topics. On Assignment Sheet #2, the students encountered some difficulty when asked if mum and mumble would be located on the dictionary page having mummer and musician as guide words. Less than 43 percent of the students could list synonyms for the word gross. Sixty-two percent of the students could divide framing square into syllables and mark the accented syllables, and only 24 percent could do the same for mahogany. Less than 48 percent of the students could write the plural of acetylene and slag.

Summary of Overall Achievement

Table 2 displays the percentage of correct answers on the unit tests by unit, by school, and by total across schools. The total for all schools indicates that on fifteen of the twenty-four units that were analyzed, students failed to reach the arbitrarily set 80 percent level. This analysis is useful in the total evaluation of the curriculum manual as a whole; however, it does not take into account the concepts being learned--how important they were in relation to the performance, how difficult they were to comprehend.

TABLE 2
PERCENT CORRECT BY UNIT BY SCHOOL

Unit	All Schools	School 2	School 3	School 5	School 6	School 7	School 8	School 9	School 10	School 11
I-A	82.5	-	-	-	-	-	-	-	-	-
II-A	77.6*	56.9*	-	-	-	-	-	-	92.8	-
III-A	78.5*	-	-	-	-	-	-	-	74.6*	-
I-B	88.6	-	-	-	-	-	-	-	91.8	-
I-C	78.0*	-	-	-	-	-	78.6*	-	-	-
II-C	87.7	-	-	-	-	-	84.1	-	-	-
III-C	67.9*	-	-	-	-	-	82.1	-	-	-
I-D	78.0*	-	-	56.0*	-	-	-	-	-	-
II-D	77.6*	-	-	67.3*	-	62.6*	74.9*	-	85.3	-
I-E	79.5*	-	89.3	-	81.2	68.4*	81.1	-	-	-
II-E	80.3	-	-	-	-	68.2*	78.1*	-	-	78.2*
III-E	83.6	-	84.6	-	-	-	-	-	-	74.4*
IV-E	84.6	-	92.6	-	-	-	-	79.9*	-	-
V-E	76.4*	-	-	-	-	-	80.9	75.8*	81.1	81.6
I-F	75.1*	-	-	-	-	-	72.1*	69.7*	-	76.6*
I-G	71.5*	-	-	-	-	-	-	-	-	71.5*
I-H	70.5*	-	96.1	-	-	-	-	-	-	59.2*
I-I	77.1*	-	-	-	-	-	-	-	-	85.0
I-J	81.2	-	-	-	-	-	-	-	-	86.3
I-K	80.3	84.9	87.4	-	-	-	-	88.6	-	-
II-K	79.6*	72.8*	77.1*	-	-	-	-	85.5	-	-
III-K	77.4*	74.8*	-	-	-	-	-	80.7	-	-
IV-K	66.5*	77.7*	-	-	-	-	-	-	-	-
V-K	86.6	-	-	-	-	-	86.6	-	-	-

Table 2--Percent Correct by Unit by School (continued)

Unit	All Schools	School 12	School 13	School 14	School 15	School 16	School 17	School 18	School 19	School 20
I-A	82.5	-	85.2	-	92.4	-	-	80.8	-	-
II-A	77.6*	-	-	-	81.2	-	-	-	-	-
III-A	78.5*	54.7*	80.9	83.0	80.1	-	-	-	-	-
I-B	88.6	85.7	-	89.7	-	86.1	-	81.4	-	-
I-C	78.0*	63.3*	82.6	-	-	-	-	76.8*	-	-
II-C	87.7	76.7*	89.2	-	96.4	-	-	-	-	-
III-C	67.9*	-	69.1*	-	-	-	-	59.4*	-	-
I-D	78.0*	73.0*	-	-	83.0	85.0	-	-	-	-
II-D	77.6*	45.7*	-	-	-	-	-	90.6	-	85.7
I-E	79.5*	-	-	-	-	-	80.0	-	-	-
II-E	80.3	-	-	-	95.0	88.7	76.9	-	-	-
III-E	83.8	-	-	-	-	92.6	-	-	-	-
IV-E	84.6	-	-	-	-	-	83.0	-	-	-
V-E	76.4*	-	-	-	-	-	68.6*	-	-	-
I-F	75.1*	-	-	-	-	-	77.9*	-	-	-
I-G	71.5*	-	-	-	-	-	-	-	-	-
I-H	70.5*	-	-	-	-	70.2*	-	-	-	-
I-I	77.1*	-	-	-	-	-	-	-	-	-
I-J	81.2	-	-	-	-	-	-	-	-	-
I-K	88.3	-	-	-	-	-	-	-	86.0	-
II-K	79.0*	-	-	-	-	-	-	-	77.3*	84.8
III-K	77.4*	-	-	-	-	-	-	-	71.4*	88.1
IV-K	66.5*	-	-	-	-	-	-	-	63.1	91.7
V-K	86.6	-	-	-	-	-	-	-	-	-

Table 2--Percent Correct by Unit by School (continued)

Unit	All Schools	School 21	School 22	School 24	School 25	School 26	School 27	School 28	School 29
I-A	82.5	-	77.8*	-	-	-	-	71.2*	83.1
II-A	77.6*	-	-	-	-	-	-	81.9	59.2*
III-A	78.5*	-	-	-	-	-	-	-	-
I-B	88.6	-	-	96.6	-	-	-	89.8	-
I-C	78.0*	-	-	83.8	-	-	-	74.6*	-
II-C	87.7	-	77.8*	83.8	-	-	-	-	-
III-C	67.9*	-	55.2*	-	-	-	-	-	-
I-D	78.0*	-	-	-	-	-	-	-	-
II-D	77.6*	-	-	72.7*	-	-	-	-	-
I-E	79.5*	-	-	-	-	-	-	-	-
II-E	80.3	-	-	-	-	-	-	-	-
III-E	83.8	-	-	-	-	83.5	-	-	-
IV-E	84.6	89.1	-	-	-	77.1*	-	-	-
V-E	76.4*	-	-	-	-	-	-	-	-
I-F	75.1*	-	-	-	-	-	-	-	-
I-G	71.5*	-	-	-	-	-	-	-	-
I-H	70.5*	-	-	-	-	-	-	73.8*	-
I-I	77.1*	-	-	-	69.0*	-	-	-	-
I-J	81.2	-	-	-	-	-	76.0*	76.5*	-
I-K	88.3	-	-	-	-	-	93.3	90.8	-
II-K	79.0*	-	-	-	-	-	83.5	-	-
III-K	77.4*	-	-	-	-	-	-	-	-
IV-K	66.5*	-	-	-	49.9*	-	78.9*	-	64.8*
V-K	86.6	-	-	-	-	-	-	-	-

TEACHER COMMENTS

The participating instructors were sent evaluation forms asking for their opinions on the different components in the units. All of their comments are listed below. A number in parentheses following the statement indicates the number of teachers who made that comment. A copy of the evaluation instrument is included in the appendix.

Orientation to Cooperative Programs

Needs more objective type questions and less essay or subjective. Most students missed the latter.
I would like to have the transparencies along with the transparency masters.
The most needed change is on the assignment sheets--they need to be harder and longer.
My students completed the job records based on their own jobs.
Didn't use objectives page, suggested activities, assignment sheets, or answers to test.
I have a booklet that I hand out to all students in the class with all the information they will need to know: memorandum of training plan, enrollment cards, rules and regulations to follow on the job and in school, and the employer's student worker evaluation forms.
Used first five test questions as worksheets; didn't use the rest of the test.
Unit was effective in helping students to learn. (2)
Suggested activities were motivating.
Information sheets were easy for teacher to use and were helpful.
Transparencies were very helpful.
Objectives page and assignment sheets were effective in helping students to learn.
Answers to assignment sheet were easy for teacher to use.
Test was motivating. I combined the rules for school and on-the-job under "general."
This is a good unit to get the students oriented to the program.
Used suggested activities, information sheets, and assignment sheets in part.
Information sheets were effective in helping students to learn.
Information sheets were the best available material.
Information sheets were written in logical order.
I have my own forms and contracts!
Excellent unit! Thank you!
I left off objectives six and seven because these rules are written up on a separate rules sheet and are discussed and tested orally.
Suggested activities are current and up-to-date.

I have used some of the suggested activities, but all of them are good suggestions.
I have better materials than the assignment sheets. I have started using a monthly job record sheet because they are easier to keep up with and because of the amount of paper needed in running off the weekly record sheets.
Test was thought-provoking.
Answers to test were easy to use.

Vocational Student Organization and Parliamentary Procedure

Unit was effective in helping students to learn. (2)
Used suggested activities in part.
I also used the parliamentary guide by Jarrell Gray with study sheets on the chapters.
Transparencies were incomplete.
Assignment sheets were thought-provoking. (2)
Need more assignment sheets on conducting meetings and include other areas such as rescind motion, call for orders of the day, and leave to withdraw a motion.
Need more variety in meetings.
Test seemed difficult for students.
Must have answers to test.
Assignment sheets need to be longer and harder.
I would like to have transparencies as well as the transparency masters.
Suggested activities page is the best available material.
Parts of the information sheets were too difficult for the students.
Assignment sheets were incomplete. I wish there were more assignments. The subject is not fully understood at the end of the unit.
Test was thought-provoking and was the best available material.
I used the entire unit. I only wish it were a tad longer.
I used the units out of the carpentry manual instead. I did use the test from this unit as a worksheet.
Used suggested activities in part; lacked available resources.
Objectives page, information sheets, transparencies, and assignment sheets are effective in helping students to learn.
Objectives page lets students know at the beginning what is expected.
Used suggested activities in part; I used these ideas along with others.
Information sheets were good; they fit the objectives well.
Transparencies were good.
Helpful to see motions presented in chart form.
Assignment Sheet #1 was good because it let students view a meeting before actual practice.
Assignment Sheet #2 gave good examples of motions that can be used.
Answers to assignment sheet were easy for teacher to use and were very helpful.
I made up additional questions for the test and gave the test in two parts--questions 1-7 and questions 8-11.
There were no mistakes on the answers to the test. They were very helpful.
The information presented in this unit was too long for just one test.
I added other questions to the test: 1) List the eight steps to follow in processing a motion; 2) Give an example of how you would make a

motion and an amendment to that motion; 3) Match different motions to an example or definition and match categories of motions to definitions of motions. I also changed objective three to fit our regular business meeting.

Leadership Development and Civic Responsibility

The part on civic responsibility is unmotivating.
Used objectives page in part.
Didn't have time to do all of the suggested activities.
Information sheets need more detail and explanation.
Didn't use TM 5 or TM 9.
Didn't use Assignment Sheet #1. Did Assignment Sheets #2 and #3 in class.
Too many essay questions on test; difficult to score.
Instead of checklists on the test, there should be true-false statements.
Test question nine should be a matching question.
I used other personality self-rating scales, also.
Assignment sheets should be harder and longer.
I would like to have transparencies as well as transparency masters.
Unit is too long.
Unit is too advanced for students.
Objectives page, suggested activities, and transparencies are effective in helping students to learn.
Information sheets are the best material available.
Didn't use Assignment Sheet #2. Assignment Sheet #1 was very good. Assignment Sheet #3 was used as a group activity.
Test was too long. I divided it into two parts.
Test has too many matching questions.
Didn't use suggested activities page.
Used the assignment sheets as worksheets in class.
Good unit but is too long. It would make two units.
Unit was effective in helping students to learn.
Used transparencies and assignment sheets in part.
Too much memory work.
Avoid questions that may be answered by student's opinion. Matching, multiple choice, or true-false might be more suitable approaches.

Health and Safety

Didn't use suggested activities. (2)
Didn't use assignment sheet.
This is one of the better units in the book.
Also used CPR training and unit on safety out of the carpentry manual.
Didn't use transparencies.
Need longer and harder assignment sheets.
Didn't use suggested activities because of budget restraints.
Used suggested activities page in part. (4)
Used information sheets in part.
Suggested activities and transparencies were too elementary for students.
Objectives, information sheets, and assignment sheet were effective in helping students to learn.

Assignment sheet, test, and answers were easy for teacher to use.
In addition to provided information, I added clearing obstructions from breathing passages and situations requiring decision making on type of first aid.
Unit was effective in helping students to learn. (3)
Used assignment sheet in part.
I did not omit any questions in this unit that required listing of answers but perhaps you may consider a question of this nature. It takes a great deal of memory work and this problem has been an item of discussion in my classes.
Have better materials available for objective two. I used the Red Cross manual and the saying "When you are pale, raise your tail. When you are red, raise your head." The students remember it.
I could use more resource material such as posters and cartoons. I showed the films.
Test was needed for successful employment.
Assignment sheets were incomplete.
Transparencies were good visual aids.
Assignment sheet was motivating; gets students to thinking about safety.
Test was written in logical order.
Answers to test were easy for teacher to use; helpful.
Just keep it up-to-date. That may be easier for each individual coordinator to do; such as localizing the unit.
Overall I feel like it's a good unit. We all need to be aware of safety and first-aid.
Too elementary for students.
Lack available resources.
Too much supplementary material is required. We had an emergency medical service give a short demonstration on CPR.
Needs more information.
Used suggested activities, transparencies, test, and answers in part.

Human Relations and Self-Improvement

Section C is the best section in the complete book. Don't change anything.
Question 11 was misunderstood by some of the students. Does it refer to a change in attitude in yourself or in someone else?
These are good units. I felt that they got more out of this section than it showed on the tests.
Used objectives page in part.
Unit was effective in helping students to learn. (2)
Needed for successful employment.
Used suggested activities in part. (2)
Need to get the students involved.
Used Assignment Sheet #3 in part.
I omitted Assignment Sheet #10 because I didn't understand what we were trying to accomplish. I need to do some work on values.
Answers to assignment sheets and answers to test were easy for teacher to use.
Transparencies were effective in helping the students to learn.
Assignment sheets were thought-provoking.

Assignment sheets were needed for successful employment.
Test and answers were easy for teacher to use.
Assignment sheets need to be longer and harder.
I use an additional human relations book. Games take too long for me to figure out and get going in 45 minutes. We also have a human relations special project that is individualized.
Used suggested activities and transparencies in part.
Test was too elementary for students.
I think it would be better to have true-false questions instead of so many select-from-a-list questions. Use the same material but make true-false statements.
I added two more concepts: productivity--the amount of work done with a certain efficiency; amount of goods and services that can be produced to still allow for a profit; most amount of work done in an efficient manner. Caveat emptor--"let the buyer beware." The customer must look out for himself/herself to keep from being taken.
Used suggested activities in part; they were unimaginative.
Easy for teacher to use.
Personally, I felt that basic information was included in the lesson plan. I did add several things during the presentation but overall I believe the lesson carried well. I entered into situation role-playing for reinforcement in place of suggested activities.
Need more information sheets.
Need ready-made transparencies as well as the transparency masters.

Relationships with Other People

Unit was effective in helping students to learn. (2)
Suggested activities were unstimulating.
Unit was easy to use. (2)
Basic information was included in lesson plan. I added several things during presentation. We used role-playing for reinforcement in place of suggested activities.
Best section in book. Don't change anything.
Good unit.
Objectives page was good in using different types of questions.
Used suggested activities in part. They were good ideas.
Information sheets fit the objectives well.
Assignment sheet was motivating and was good for letting students see how the rules work.
Used assignment sheet as a group activity.
It is easy for student to study for and take the test.
Answers to test are helpful to teacher.
I don't see any need for changes in the unit.
Used parts of unit.
Didn't use objectives page.
Test is too subjective.
Short-answer questions are difficult for teacher to score.
Question one should be a true-false question.
Lacked budget for using some of suggested activities.

Need more information.
Needs transparencies.
Assignment sheets need to be harder and longer.

Coping with Problems

Used suggested activities in part; they were very good.
Information sheets need more detail or explanation.
Needs more assignment sheets.
Test should have more objective type questions and less subjective or essay. Students don't do as well on subjective tests.
Answers to test need to be more concise.
I supplement the curriculum material with other materials.
Unit was effective in helping students to learn.
Unit was thought-provoking and easy for teacher to use.
This was the first test and the students didn't do so well, but on the retest everyone scored at least 85 percent. I think that I moved through the unit too fast. I feel like it is a good unit.

Oral Communications

Used suggested activities and assignment sheets in part. (2)
For my students it would help if the test was not so long. I broke it down into three parts: questions 1 through 10, questions 11 through 17, and questions 18 through 21.
Test was too long. I divided it into two parts. (2)
Effective in helping students to learn.
I made up questions instead of having the students just discuss questions 16, 17, and 18.
On Assignment Sheet #10, I had students give a speech and the others rated them.
Used information sheets and answers to assignment sheets in part.
Effective in helping students to learn.
Facilities and equipment unavailable or inappropriate.
Have better materials available.
Unmotivating.
Needed for successful employment.
Easy for teacher to use.

Written Communications

Used suggested activities in part. (2)
Suggested activities were too elementary.
Used some of the transparencies; had better materials available. (2)
Answers to assignment sheets and answers to test were easy for teacher to use.
I experienced few problems when introducing the subject. I do believe my students could have handled advanced communication concepts. Greater depth was achieved through personalization of lesson plan.
It would help to make the tests shorter. I broke the unit down into seven parts.
Used objectives page in part.
Transparencies were good.

I thought this was a pretty good unit. It covered most everything.
Many students said the unit agreed with what they had been taught in other classes such as typing and English.
Effective in helping students to learn. (3)
Thought-provoking.
Didn't use the assignment sheets. Instead, I had each student write a proper business letter to a corporation requesting information concerning their company. After they received the material they requested, each student wrote a follow-up letter thanking the company for the information they had sent. The information they received will be used on a unit on investing.
I liked the unit. I personally had to do a lot of work myself because I wasn't that familiar with all the parts of a letter, different styles, and so on. I feel like it is a good unit; both my students and I learned a lot.
Test was complete.
Answers to test were easy for teacher to use.
Confident of technical knowledge myself.
Out-of-date.
Not logically written.
Unmotivating.
Unimaginative.
Needed for successful consumerism.
Easy for teacher to use.
I question the "up-to-dateness" of 1) typing or writing the inside address in at least three lines; 2) using formal complimentary closes--in a business letter, anything but "sincerely" is too stiff; 3) displaying special service notations below the stamp and at least three line spaces above the address.
It is poor testing when a question is started on one page and completed on another page. It makes poor thought continuity!
Most students "can't handle" the formal report. I cringe at the thought of the majority of the classes attempting a formal report. Therefore, parts XX and XXI on the information sheet could be revised to merely include informing the student that it is a means of written communications. Although the letter-writing skills and practice are good, students resented being taught "typing" in ICE class.
Used assignment sheets and answers in part.
This is a very good unit. It covers adequately the basic requirements that are necessary for an individual to address himself/herself properly in a written communication.
Maybe the entire section and this unit could be broken down into smaller segments.
There is too much memory work in the unit tests.
Unit is the best available material.
Objectives page is needed for successful employment.
Information sheets were well-sequenced.
Didn't use transparencies; facilities and equipment were unavailable.
Assignment sheets were unmotivating.
Answers to assignment sheets, test, and answers to test were complete.
Students had a hard time with topic outline and writing letters.
Assignment Sheet #3 was difficult.

Assignment Sheets #4 and #5 were easy.
The students felt this unit wasn't motivating. It is hard to get the students to write.

Managing Resources

Objectives page was effective in helping students to learn. (2)
Information sheets were effective in helping students to learn.
Used suggested activities in part. (3)
Used assignment sheets in part. (2)
Have adequate resources for assignment sheets.
Test and answers were easy to use.
Course covers many good ideas!
Question 9 contains the wrong information.
Have better materials available than information sheets.
Information about reading (interpreting) stock report is confusing to the students because the name of the company and the stocks and dividends are listed together on the information sheet but are tested separately on the test.
Assignment sheets are unimaginative.
When matching questions cover two pages on the test, the answers should be on the same page as the question, not on different pages.
Information about stock should be included in a separate unit.
Assignments about comparison shopping are needed.
What is the purpose of advertising assignment? Of the value of taxes assignment? There is no information in the information sheets about either!!
Information sheets and assignment sheets lack congruity.
Have better materials available.
Incomplete.
Not logically written.
Unmotivating.
Confident of technical knowledge myself.
Unit was effective in helping students to learn.
Lacked available resources for doing suggested activities.
Assignment sheets were too elementary for students.
Part of the stockmarket is too advanced for the student. It's hard for the student to understand stockmarket procedures.

Personal Banking Procedures

Unit covers the concepts pretty well.
Very good objectives.
Used information sheets in part.
We supplemented the unit with speakers and films.
The students were interested in this unit.
Effective in helping students to learn. (4)
Facilities and equipment were unavailable or inappropriate.
Written in logical order.
Unmotivating.
Easy for teacher to use.
Confident of technical knowledge myself. (2)

Very good assignment sheets.
Answers to test and answers to assignment sheets were easy to use.
Test was thought-provoking.
Very good unit.
Used suggested activities in part; they were ineffective in helping the students to learn.
Used one of the suggested activities as part of the test.
I showed a film on how banks operate. It helped.
Unit was up-to-date; however, stubbed checks are not used much. Most banks have a small account book they give with checks.
Thought-provoking.
Up-to-date.
Needed for successful employment.
Good information.
Objectives page is not indepth enough.
Include banker as resource person.
Include personalized checks.
Include more about services offered by banks.
Should be brought up-to-date. Information changes from small communities to large banks in large towns/cities.
I feel a couple of good textbooks that are on the state-adopted textbook list would be of great benefit to go along with this section--Succeeding in the World of Work and Pathway to Independence.

Obtaining and Using Credit and Loans

Students are interested in auto loans and need more information.
Add how to figure at least simple interest.
Very good unit.
Used suggested activities in part; they were very good.
Information sheets are very helpful.
Students think the assignment sheets are helpful.
Used suggested activities, transparency, and assignment sheets in part.
Objectives page and information sheets were effective in helping students to learn.
Lack available resources for using transparency.
Test and answers are easy for teacher to use.
Objectives page and information sheets were current/up-to-date.
Objectives page and suggested activities were thought-provoking.
Information sheets were easy for teacher to use.
Didn't use transparency.
Assignment sheets were needed for successful employment.
Answers to assignment sheets and answers to test were complete.
Test and answers were good.
Added questions on annual percentage rate, simple interest, and add-on interest.

Insurance

Effective in helping students to learn. (2)
Objectives page--Facilities and equipment were readily available or unnecessary.

Suggested activities are as good as the guest speaker. Our speaker did a good job.
Information sheets were good.
Assignment sheets provided good questions for students to ask speaker.
I added a few questions relating to terms.
Good unit but needs more on automobile insurance.
Used suggested activities in part.
Used assignment sheets as research material instead of questions.
Needs more information on health insurance.
Objectives page and information sheets were effective in helping students to learn.
Used suggested activities and assignment sheets in part.
Lacked available resources for completing assignment sheets.
Test and answers were easy for teacher to use. (2)
Had students list four types of life insurance in the order of cost of premium from highest to lowest--endowment, limited, straight life, and term.
Suggested activities, information sheets, and test were complete.
Assignment sheets were ineffective in helping students to learn.
Assignment sheets were unimaginative.
Assignment sheets need to be reworked.

Buying a Car

Omitted having a reputable car dealer speak to the class and having students look at a car as if they were buying a used car. These suggested activities would probably have been good but we didn't have enough time.
Assignment sheet was too easy for students.
No suggestions for changes. The students were very interested and glad this material was used.
Definitions are okay.
The examples on trading are about twenty years old. The students make fun of them.
Objectives need reworking.
Used test and answers.
Information needs reworking and bringing up-to-date.
Not in enough detail.
Needs more consumer information and sources for help in assessing the value and condition (for males and females).
Could be effective in helping students to learn.
Facilities and equipment were readily available.
Too easy.
Have adequate resources.
Have better materials available.
Incomplete.
Out-of-date/behind the times.
Not logically written.
Unstimulating/unimaginative.
Unmotivating.
Difficult for teacher to use.
Confident of technical knowledge myself.

Very good.
Effective in helping students to learn. (2)
Objectives page helps but is difficult to use.
Used some of the suggested activities; it was difficult to schedule films and trips at the time unit was used.
Did not have transparencies available; thought this was a fault of ours.
Assignment sheets were not logically written. I didn't feel that these particular ones would help.
Answers to assignment sheets were adequate for the ones we used.
Information sheets were satisfactory.
Lacked available resources for information sheets and suggested activities.
Test would rate as fair. It was rather difficult.
Answers to test were good.
If there were more films available, it would help in a better presentation.
This subject is so complex that it is hard to present to the students. Probably, more time should be spent on the unit and other references need to be used in order to adequately cover the subject. (A revision might be in order.)
Unit is compact.
Objectives page is okay.
Used suggested activities in part.
Information sheets are good except for example on figuring total cost of car. Where did you get your answer?
Written in logical order.
Easy for teacher to use.
Information sheets should have a more detailed explanation of the 15-18% that should be taken off the sticker price without a trade-in.
This unit had a lot of appeal to the students. Buying a car is a topic that most teenage students can relate to easily.

Basic Law for Business and Consumers

Effective for helping students to learn. (2)
Suggested activities were used in part.
Contains information but hard to get the facts out.
Not interesting to students.
Questions are not positive enough sometimes.
Not enough information to get students interested.
Not enough on wage and hour laws.
Labor bulletins are easier to teach from on labor laws (child).
Reference books are easier to use and students remember things better when put in outline form.
Suggested activities were thought-provoking.
Good suggested activities.
Information sheets are too compact; need more detail.
Good assignment sheets and answers.
Test was okay except for question 6. It seems that the students who had had a business law course did not always agree with the answers. It should also probably be reworded to say "list conditions" rather than "things."

Suggested activities were current/up-to-date.
Didn't use transparencies; lacked available resources.

Labor Unions

Answer sheet is not broad minded enough with borderline answers.
Not enough in detail about unions.
Unit contradicts information from union stewards.
Students have a lot of interest in unions.
Effective in helping students to learn.
Facilities and equipment are readily available.
Have better materials available.
Incomplete.
Out-of-date/behind the times.
Written in logical order; well-sequenced.
Motivating.
Needed for successful employment.
Easy for teacher to use.
Confident of technical knowledge myself.

Economics of Free Enterprise

Effective in helping students to learn. (2)
Suggested activities, transparencies, assignment sheets and answers were used in part. (2)
Test and answers were easy to use.
Unit was good, but it is too long and complicated.
Used suggested activities in part.
Didn't use answers to test.
We invited local banker to speak on today's economy.
Some facilities and equipment were unavailable.
Students weren't interested.
Is the best available material.
Well-sequenced.
Unmotivating.
Needed for successful employment.
Biased/stereotyped.
Easy for teacher to use.
Confident of technical knowledge myself.
Information sheets were too difficult for students.
Used some of the transparencies; had better materials available.
Use parts of the unit components.
The fables were thought-provoking. You could have used a few simpler, shorter ones.
Answers to assignment sheets were difficult for the teacher to use.
Answers to test were easy for teacher to use.
The Phillips 66 packet is excellent. I wish ICE teacher-coordinators could get it more easily. I have all of the Reader's Digest Economics reprints.
Needs more information on current terms such as inflation.
Students love success stories based on "American Way."

Career Planning

Students want more examples (true stories).
Students complain about material not being interesting. They claim it doesn't hold their interest.
Students like the guessing games that go with the tests. They don't like completion questions.
Students like questions and group discussions in, about, and to the group.
Used Succeeding in World of Work, Pathway to Independence, and some good career books. They were much better than the career guide and are more practical.
I'm not too high on this career guide. The approach just isn't interesting even to the teacher.
Unit was not motivating. I don't know if it was the time of the year (last nine weeks period) or the teacher's lack of motivation.
The students didn't seem to care whether they did the work or not.
Suggested activities were used in part.
Test and answers were easy for teacher to use.
Information sheet was complete.
It's very difficult for students to complete a matching test when the definitions are on one side of the sheet and the answers are on the other side.
Most of the students did the poorest on those questions where they had to write in an answer.

Job Application and Interview

Didn't use suggested activities or transparency.
Effective in helping students to learn.
Facilities and equipment were readily available.
Have better materials available.
I think a score card for grading job applications, follow-up letters, and letters of application would be in order; for example, neatness, completeness, legibility, information, correct wording, proper sentence structure. The resume could be done the same way.
Transparencies should be included.
Better references could be presented.
Answers to test were presented well.
Test was too simple. It needs to go into more detail and they would be better prepared.
Unit is not as complete as it should be. It needs better examples.
Same personnel people hire high school graduates that hire college graduates. They should be trained in the same way.
Objectives page was unimaginative.
Why say 85 percent? I don't give and re-give every test until every student scores an 85 percent.
Unable to secure teletrainer.
Information sheets were current.
Transparency was outdated.
Used assignment sheets in part; needed for successful employment.
Used test and answers in part.

Have better materials than test.
Answers to test were difficult for teacher to use.
Have separate "dress for success" unit with grooming.
Needs more resume examples.
Forget "data sheet" term; it's not from the "real world."

Whole Numbers

Didn't use suggested activities. (2)
Too simple and too long.
Used parts of the unit.
Information sheets were effective in helping students to learn.
Information sheets were very good and very usable.
Test and answers were easy for teacher to use.
Shorten the division assignment sheet.
Add a "change" assignment sheet; for example, customer purchases item for $2.32 and hands clerk a $5 bill, how much change does the customer receive?
Objectives page and assignment sheets were complete.
Suggested activities, answers to assignment sheets, test, and test answers were easy for teacher to use.
Information sheets were written in logical order.
Used most of the assignment sheets as group activities.
Most of the errors on the test were careless mistakes.
Effective in helping the students to learn.
Good to know what to expect.
If I sense that members of the class do not know math, I test and teach. Some need help, so class members help teach others.
Information sheets and assignment sheets were written in logical order.
Information sheets, assignment sheets, answers to assignment sheets, and answers to test were easy for teacher to use.
Students were surprised at how much they had forgotten. For some, it was a refresher course; for others it was new material.
Good unit.
I combined this unit with the association of numbers method in adding.
Used suggested activities in part.
Have my own transparencies.
Assignment Sheet #8--Vertical and Horizontal Addition is not necessary.

Decimals

Objectives page, information sheet, and assignment sheets were effective in helping students to learn.
Answers to assignment sheets and answers to test were easy for teacher to use. (2)
Information and assignment sheets were written in logical order. (2)
Students do need to work with the decimal more. They forget what to do with it when adding, subtracting, multiplying, and dividing.
A good unit.
Didn't use suggested activities. (2)
Unit was too simple and too long.
Used suggested activities in part. (2)

Effective in helping students to learn.
Complete.
I thought the entire unit was too easy. When we finished, I realized that it wasn't.
Used objectives page partly.
Didn't spend the time explaining each part of the information sheet.
Most of the group did very badly, mainly because I wasn't at school when this unit was covered. My substitute really didn't spend time helping them understand the assignment sheets. Most of the students have trouble with decimals.
Facilities and equipment are readily available.
Have adequate resources.
Information sheets and assignment sheets were effective in helping students to learn.
Have my own transparencies.
Excellent section.

Fractions and Percents

Didn't use objectives page.
Information sheet was too difficult.
Assignment sheets were very hard for students to understand.
This is an area in which I need to become more familiar.
Even after doing the assignment sheets, the students had trouble with the test.
The students did not enjoy this unit! It was a subject that didn't motivate them.
Information sheets and assignment sheets were effective in helping the students to learn. They were well-sequenced, thought-provoking, and up-to-date.
Answers to assignment sheets and answers to test were easy for the teacher to use.
Students need this unit. For some, it was a review; for others, it was either new or they had totally forgotten it.
Used some of suggested activities.
Assignment Sheet #9 was difficult to understand.
Test question 12 was difficult to understand.
The answer to test question 8, part "c" should be 19/100 instead of 19/200.
Unit was too elementary I thought. The students' test scores didn't show that, however.
Information sheets were out-of-date.
Assignment sheets and test were too elementary.

Wages

Didn't use suggested activities.
Unit was too elementary.
Information sheets were out-of-date.
Objectives page, assignment sheets, and information sheets were effective in helping the students to learn.
Information sheets and assignment sheets were written in logical order.

Assignment sheets and test were thought-provoking.
Answers to test and answers to assignment sheets were easy for teacher to use. (2)
Every student needs this unit. The students who understood this unit found it easy. Those who didn't think they could do it found it difficult--some of those succeeded.
Test and assignment sheets were easy for teacher to use.
Effective in helping students to learn.
Objectives page was good and effective.
Confident of technical knowledge myself.
Information sheets are good and are needed for successful employment.
Good assignment sheets; excellent learning tools.
Maybe more information is needed on information sheets to help students understand assignment sheets.
Test could be longer.

Using Written Resources

Didn't use suggested activities.
The assignment sheets were too elementary for some of the students.
Finding a book in the library fit in with their English term paper. It was good review and helped some.
The students felt like finding information in a dictionary was fourth-grade work, but a review doesn't hurt.
Answers to test were easy for teacher to use.
Some of my students can study the textbook and specify answers to questions and yet they cannot close their books and write the answer. Since I know the students, one or two words along the line of the answer is counted correct.

CONCLUSIONS

This study was designed specifically to identify those concepts on which 20 percent or more of the students were not achieving. This standard was arbitrarily set by the Research Unit. Furthermore, the students' knowledge was measured solely by their ability to respond correctly to the test items in the curriculum manual.

On any given test item where less than 80 percent of the students responded correctly, we assume there is a problem. The concept itself may be so difficult to grasp that only the more advanced students should be expected to learn it. Unclear information or inadequate assignment sheets tend to confuse the students and therefore restrict their understanding of the material. The test questions themselves may be poorly written. For example, student response was lower on the list questions because several answers were required. The discussion questions proved difficult because the questions were marked incorrect if any portion of the student's answer was wrong. The students also had difficulty arranging steps in the proper sequence.

When only one or two schools have less than 80 percent of the students passing an item, the problem may be unique to that situation. The curriculum materials themselves may provide an adequate base for teaching the concept but are not being properly used by the instructor. Curriculum utilization workshops might provide motivation for those instructors who are unfamiliar with the curriculum format. Teachers may not be as knowledgable in some areas as they are in others and therefore may have difficulty presenting some topics. No effort was made in this study to ascertain if there was a relationship between the teacher-coordinators' areas of expertise and student achievement or between the teacher-coordinators' participation in a curriculum workshop and student achievement.

Many of the teacher-coordinators commented on the fluctuation of class size during the year because of drop-outs and transfers and added that this fluctuation further hindered successful teaching. However, there did not appear to be a relationship between class size and student achievement or between occupational division (ICE, HERO, or VAOT) and student achievement. Because over one-half of the units fell below the arbitrarily set standard of 80 percent, the manual warrants further study by the curriculum writer/specialist to determine what weaknesses exist--whether in the presentation of the concepts as written or as taught or in the students' inability to comprehend the more abstract concepts. There also seems to be a need for more up-to date assignment sheets that are geared to the students' interests and abilities.

APPENDICES

STUDENT ACHIEVEMENT

This section contains a list of the percentage of correct answers attained by the students overall on each item on the unit tests from the Interdisciplinary Cooperative Education curriculum manual. An asterisk (*) indicates those percents below 80, which were considered by the Research Unit to be less than satisfactory achievement.

The assignment sheets are designated by the letters A.S. An n.u. beside an item signifies that the item was not used. An n.r. indicates that the instructor did not respond as to whether the assignment sheet was used during the course. A g.a. signifies that the assignment sheet was done as a group activity.

STUDENT ACHIEVEMENT

Unit I-A

Q 1a. 98.4
b. 92.8
c. 100
d. 95.2
e. 84.8
f. 84.0
g. 80.8
h. 72.8*
Q 2a. 88.0
b. 92.0
Q 3a. 91.2
b. 84.8
Q 4a. 89.8
b. 87.8
c. 94.9
d. 90.8
Q 5a. 94.4
b. 88.8
c. 80.8
d. 70.4*
Q 6a. 64.3*
b. 53.6*
Q 7a.1) 66.1*
2) 30.4*
b. 78.6*
c. 20.6*
d. 5.9*/n.u.
Q 8a. 92.8
b. 81.6
c. 88.8
d. 99.2
e. 80.8
f. 92.8
g. 95.2

Unit I-A
A.S. #1
1st week 89.7
2nd week 86.7
3rd week 76.7*

Unit II-A
Q 1a. 84.8
b. 83.8
c. 78.1*
Q 2a. 98.1
b. 95.2
c. 90.5
d. 85.7
Q 2e. 83.8
f. 95.2
Q 3a. 81.9
b. 68.6*
c. 67.6*
d. 68.6*
e. 66.7*
f. 67.6*
g. 66.7*
h. 62.9*
i. 63.8*
j. 64.8*
k. 60.3*
l. 64.4*
Q 4a. 87.6
b. 89.5
c. 71.4*
d. 92.4
e. 95.2
f. 94.3
g. 92.4
h. 86.7
i. 64.8*
j. 62.9*
k. 85.7
l. 85.7
m 82.9
n. 81.0
Q 5a. 86.7
b. 79.0*
c. 76.2*
Q 6a. 80.0
b. 88.6
c. 76.2*
Q 7a. 88.6
b. 96.2
c. 98.1
d. 80.0
Q 8a. 66.7*
b. 76.2*
c. 88.6
d. 66.7*
Q 9a. 89.5
b. 65.7*
c. 83.8
d. 80.0
e. 64.8*
f. 67.6*
g. 59.0*
h. 83.8

Q 9i.	82.9
j.	77.1*
k.	54.3*
l.	89.5
m.	92.4
n.	75.2*
o.	57.1*
p.	82.9
q.	66.7*
r.	56.2*
s.	67.6*
t.	82.9
Q10a.	82.9
b.	73.3*
c.	65.7*
d.	81.9
e.	60.0*
f.	71.4*
g.	66.7*
Q11.	64.8*
Q12.	n.r., g.a./A.S.

Unit II-A
A.S. #1

Q 1a.	70.6*
b.	82.4
c.	94.1
Q 2a.	94.1
b.	82.4
c.	82.4
d.	76.5*
Q 3a.	94.1
b.	94.1
c.	94.1
d.	88.2
Q 4a.	94.1
b.	58.8*
c.	82.4
d.	88.2

Unit III-A

Q 1.	81.6
Q 2a.	83.9
b.	80.5
Q 3a.	81.6
b.	71.3*
c.	65.5*
d.	62.1*
Q 4a.	97.7
b.	95.4
c.	97.7
d.	97.7
e.	96.6
Q 4f.	96.6
g.	98.9
h.	75.9*
i.	95.4
j.	89.7
k.	92.0
l.	95.4
m.	97.7
n.	87.4
o.	88.5
p.	71.3*
q.	97.7
r.	94.3
s.	81.6
t.	92.0
u.	94.3
v.	96.6
w.	93.1
x.	97.7
y.	96.6
z.	88.5
aa.	94.3
bb.	79.5*
cc.	86.2
dd.	94.3
ee.	65.5*
ff.	94.3
gg.	93.1
hh.	95.4
Q 5a.	59.8*
b.	73.6*
c.	87.4
d.	75.9*
e.	79.3*
f.	75.9*
g.	55.2*
h.	71.3*
i.	78.2*
j.	67.8*
k.	67.8*
Q 6a.	85.1
b.	97.7
c.	65.5*
d.	95.4
e.	89.7
f.	90.8
Q 7a.	82.8
b.	55.2*
c.	80.5
d.	90.8
e.	89.7
f.	83.9
Q 8a.	54.0*

Q 8b.	81.6
c.	88.5
d.	58.6*
e.	70.1*
f.	78.2*
g.	80.5
h.	81.6
i.	88.5
j.	89.7
k.	83.9
l.	71.3*
m.	65.5*
n.	74.7*
o.	73.6*
p.	71.3*
q.	60.9*
r.	67.8*
Q 9a.	71.3*
b.	65.5*
c.	74.7*
d.	74.7*
e.	73.6*
f.	71.3*
g.	66.7*
h.	72.4*
i.	54.0*
j.	69.0*
k.	75.9*
l.	59.8*
m.	60.9*
n.	66.7*
o.	52.4*
p.	60.9*
Q10a.	74.7*
b.	69.0*
c.	59.8*
d.	56.3*
Q11a.	71.3*
b.	80.5
c.	86.2
d.	73.6*
e.	71.3*
f.	80.5
g.	77.0*
Q12a.	85.1
b.	85.1
c.	82.8
d.	73.6*
Q13a.	74.7*
b.	48.3*
c.	79.3*
d.	77.0*
e.	67.8*
Q13f.	79.3*
g.	80.5
h.	74.7*
i.	60.9*
j.	75.9*
k.	81.6
l.	62.1*
m.	42.5*
n.	77.0*
Q14.	n.r., n.u., 100/A.S.

Unit I-B

Q 1a.	98.9
b.	98.9
c.	98.9
d.	99.4
e.	100
Q 2a.	95.0
b.	94.4
c.	88.9
Q 3a.	95.6
b.	93.3
c.	92.2
d.	90.0
Q 4a.	91.7
b.	92.2
c.	92.2
Q 5a.	78.9*
b.1)	85.6
2)	82.2
3)	81.1
Q 6a.	92.8
b.	78.9*
c.	89.4
d.	91.1
e.	58.3*
f.	86.1
g.	86.1
h.	91.7
i.	83.9
j.	79.4*
Q 7a.	96.1
b.	97.8
c.	95.6
d.	88.3
Q 8a.	83.3
b.	87.2
c.	96.1
d.	95.0
Q 9a.	94.4
b.	94.4
c.	67.8*
Q10a.	93.3

Q10b. 68.3*
c. 92.2
d. 80.0
Q11a. 97.2
b. 98.3
c. 52.8*
Q12. n.r., n.u./A.S.

Unit I-C
Q 1a. 95.9
b. 91.2
c. 92.5
d. 93.9
e. 90.5
f. 93.9
Q 2a. 83.7
b. 95.2
c. 91.2
d. 87.8
e. 65.3*
f. 85.0
g. 93.9
h. 94.6
Q 3a. 91.8
b. 96.6
c. 78.9*
d. 76.9*
e. 85.7
f. 88.4
g. 74.8*
h. 68.0*
Q 4a. 74.8*
b. 74.8*
c. 72.1*
Q 5a. 61.9*
b. 58.5*
c. 52.4*
Q 6a. 68.0*
b. 63.3*
Q 7a. 92.5
b. 85.7
c. 91.8
d. 57.1*
e. 90.5
f. 87.1
g. 87.8
h. 90.5
i. 83.7
Q 8a. 59.9*
b. 51.7*
Q 9a. 64.6*
b. 55.8*
Q10a. 95.9

Q10b. 88.4
c. 72.8*
d. 61.2*
e. 93.9
f. 90.5
g. 92.5
h. 89.8
i. 81.0
j. 92.5
k. 91.2
Q11a. 59.2*
b. 51.7*
c. 53.1*
d. 48.3*
e. 40.1*
f. 38.8*
Q12. n.r., 100/A.S.
Q13. n.r., 100/A.S.
Q14. n.r., 58.3*/A.S.

Unit II-C
Q 1a. 93.9
b. 87.7
c. 86.0
d. 86.0
e. 85.1
f. 82.5
g. 83.3
h. 78.1*
Q 2a. 88.6
b. 87.7
c. 97.4
d. 93.0
e. 78.9*
f. 94.7
Q 3a. 96.5
b. 98.2
c. 91.2
d. 95.6
Q 4a. 93.9
b. 98.2
c. 91.2
d. 93.9
e. 97.4
f. 93.0
g. 97.4
h. 95.6
Q 5a. 86.8
b. 90.4
c. 88.6
d. 88.6
e. 88.6
Q 6a.1) 84.2

Q 6a.2) 80.7
b.1) 93.9
2) 88.6
c.1) 95.6
2) 87.7
d.1) 93.0
2) 81.6
e.1) 91.2
2) 86.0
f.1) 69.3*
2) 59.6*
g.1) 64.0*
2) 61.4*

Unit III-C
Q 1. 82.1
Q 2a. 91.0
b. 87.2
c. 83.3
d. 79.5*
Q 3a. 70.5*
b. 71.8*
c. 71.8*
d. 64.1*
e. 60.3*
Q 4a. 64.1*
b. 60.3*
c. 55.1*
d. 51.3*
e. 44.9*
Q 5a. 71.8*
b. 56.4*
Q 6a. 80.8
b. 66.7*
c. 62.8*
d. 67.9*
e. 66.7*
f. 79.5*
g. 66.7*
Q 7a. 65.4*
b. 59.0*
c. 65.4*
d. 61.5*
e. 61.5*
Q 8. n.r./A.S.
Q 9. n.r./A.S.

Unit III-C
A.S. #1
a. 48.1*
b. 11.1*
c. 81.5
d. 22.2*
e. 44.4*
f. 66.7*
g. 44.4*
h. 55.6*
i. 85.2
j. 48.1*
k. 51.9*
l. 18.5*
m. 3.7*
n. 48.1*
o. 55.6*
p. 48.1*
q. 77.8*
r. 37.0*
s. 33.3*
t. 33.3*
u. 29.6*
v. 44.4*
w. 77.8*
x. 66.7*
y. 29.6*
z. 18.5*
aa. 22.2*

A.S. #3
Q 1. 80.8
Q 2. 84.6
Q 3. 57.7*
Q 4. 73.1*
Q 5. 73.1*
Q 6. 69.2*
Q 7. 57.7*
Q 8. 65.4*
Q 9. 65.4*
Q10. 69.2*
Q11. 50.0*

Unit I-D
Q 1a. 86.4
b. 84.7
c. 84.7
d. 78.0*
e. 79.7*
f. 79.7*
g. 84.7
Q 2a. 96.6
b. 89.8
c. 83.1
d. 89.8
e. 86.4
f. 98.3
g. 91.5
h. 67.8*

Q 2i.	89.8
j.	57.6*
k.	88.1
l.	71.2*
m.	96.6
n.	96.6
o.	89.8
p.	93.2
q.	81.4
r.	66.1*
s.	57.6*
t.	88.1
u.	94.9
v.	81.4
w.	94.9
x.	94.9
y.	84.7
z.	74.6*
aa.	74.6*
Q 3a.	84.7
b.	78.0*
c.	88.1
d.	81.4
e.	91.5
f.	88.1
g.	83.1
Q 4a.	71.2*
b.	93.2
c.	40.7*
d.	81.4
e.	74.6*
Q 5a.	79.7*
b.	81.4
c.	72.9*
d.	61.0*
e.	93.2
f.	66.1*
g.	72.9*
h.	86.4
i.	59.3*
j.	57.6*
k.	79.7*
l.	72.9*
Q 6.	74.6*
Q 7a.	71.2*
b.	67.8*
Q 8.	67.8*
Q 9.	67.8*
Q10a.	66.1*
b.	61.0*
Q11a.	79.7*
b.	79.7*
c.	79.7*
Q11d.	83.1
Q12a.	96.6
b.	84.7
c.	74.6*
d.	72.9*
Q13a.	98.3
b.	76.3*
c.	88.1
d.	93.2
e.	93.2
f.	84.7
g.	93.2
h.	83.1
Q14a.	83.1
b.	78.0*
c.	74.6*
d.	72.9*
Q15.	78.0*
Q16.	80.4
Q17.	78.4*
Q18.	78.4*
Q19a.	91.5
b.	79.7*
c.	76.3*
d.	71.2*
e.	81.4*
f.	81.4*
g.	69.5*
h.	78.0*
i.	88.1
j.	84.7
k.	64.4*
Q20a.	91.5
b.	79.7*
c.	71.2*
d.	72.9*
e.	89.8
f.	66.1*
g.	74.6*
h.	71.2*
i.	57.6*
j.	76.3*
k.	74.6*
l.	55.9*
m.	55.9*
n.	84.7
Q21a.	83.1
b.	71.2*
c.	76.3*
d.	78.0*
e.	78.0*
f.	69.5*
g.	78.0*

Q21h.	78.0*
i.	74.6*
j.	71.2*
k.	61.0*
l.	20.3*
m.	69.5*
Q22.	n.r., 100/A.S.

Unit II-D

Q 1a.	94.5
b.	97.9
c.	77.4*
d.	93.8
e.	80.8
f.	86.3
g.	83.6
h.	77.4*
i.	76.0*
j.	82.2
k.	87.7
l.	78.8*
m.	90.4
Q 2a.	96.6
b.	96.6
c.	94.5
d.	90.4
e.	93.2
f.	93.2
g.	91.8
h.	87.7
Q 3.	82.2
Q 4a.	85.6
b.	84.2
c.	78.8*
d.	82.2
e.	81.5
Q 5a.	85.6
b.	76.0*
c.	84.9
d.	67.8*
e.	78.1*
f.	87.0
g.	77.1*
h.	85.0
Q 6a.	78.1*
b.	80.8
c.	80.8
d.	76.7*
Q 7a.	89.0
b.	74.7*
c.	87.0
d.	78.1*
e.	87.0
Q 7f.	84.9
g.	84.2
h.	74.0*
i.	84.9
j.	89.7
k.	93.8
l.	76.7*
Q 8a.	91.8
b.	79.5*
c.	87.0
d.	85.6
Q 9a.	86.2
b.	87.2
c.	95.4
d.	88.1
Q10a.	71.9*
b.	49.3*
c.	78.1*
d.	77.4*
e.	76.0*
f.	79.5*
g.	78.1*
h.	54.1*
i.	76.7*
j.	67.1*
Q11a.	64.4*
b.	67.8*
c.	71.9*
Q12a.	87.0
b.	83.6
c.	88.4
d.	87.7
Q13a.	82.9
b.	47.9*
c.	61.6*
d.	53.4*
Q14a.	62.0*
b.	63.6*
c.	55.8*
d.	49.6*
Q15a.	71.9*
b.	77.4*
c.	72.6*
d.	85.6
Q16a.	41.6*
b.	46.5*
Q17a.	57.5*
b.	67.9*
c.	75.2*
d.	54.1*
Q18a.	89.7
b.	81.5
c.	76.7*

Q18d. 85.0
e. 78.6*
f. 70.0*
g. 75.7*
Q19a. 67.0*
b. 50.5*
c. 71.6*
d. 77.1*
e. 58.7*
f. 80.7
Q20a. 68.8*
b. 55.0*
c. 58.7*
Q21a. 70.6*
b. 78.0*
c. 63.3*
d. 68.8*
e. 58.7*
f. 70.6*
g. 71.6*

Unit II-D
A.S. #1
Q 1. 81.0
Q 2. 85.0

A.S. #2
Q 1. 87.0
Q 2. 65.2*
Q 3. 78.3*
Q 4. 47.8*
Q 5. 60.9*
Q 6. 60.9*
Q 7. 43.5*
Q 8. 39.1*

A.S. #3
Q 1a. 84.6
b. 84.6
c. 84.6
Q 2a. 76.9*
b. 76.9*
c. 69.2*
Q 3. 76.9*

A.S. #4
Q 1. 66.7*, n.r.
Q 2. 100, n.r.

A.S. #5
50.0*, n.r.

Unit I-E
Q 1a.1) 92.7
2) 82.3
3) 77.4*
b.1) 87.1
2) 89.5
3) 88.7
Q 2a. 96.0
b. 88.7
c. 75.8*
d. 86.3
e. 89.5
f. 74.2*
g. 98.4
h. 92.7
i. 78.2*
j. 83.1
k. 83.1
l. 75.8*
m. 66.1*
n. 86.3
o. 98.4
p. 96.8
Q 3a. 92.7
b. 95.2
c. 97.6
d. 93.5
e. 96.0
f. 88.7
g. 97.6
h. 79.8*
Q 4a. 97.6
b. 96.0
c. 83.9
d. 94.4
e. 69.4*
f. 71.8*
g. 97.6
h. 100
i. 77.4*
j. 100
k. 94.4
Q 5a. 81.5
b. 81.5
c. 95.2
d. 87.1
e. 64.5*
f. 91.9
g. 97.6
h. 97.6
i. 74.2*

Q 5j. 97.6
Q 6a. 98.4
b. 93.5
c. 92.7
d. 78.2*
e. 99.2
f. 97.9
g. 95.2
h. 93.5
i. 97.6
j. 92.7
k. 90.3
l. 79.8*
m. 94.4
n. 60.5*
Q 7a. 34.7*
b. 31.5*
c. 90.3
d. 86.3
e. 90.3
f. 94.4
g. 90.3
h. 91.9
Q 8a. 83.1
b. 69.4*
c. 61.3*
d. 63.7*
e. 55.6*
f. 68.5*
g. 62.9*
h. 63.7*
i. 58.9*
j. 75.0*
k. 54.8*
l. 73.4*
m. 51.6*
n. 75.8*
o. 62.1*
p. 55.6*
Q 9a. 68.5*
b. 32.3*
c. 29.0*
d. 41.1*
e. 27.4*
f. 29.0*
g. 45.2*
h. 47.6*
Q10a. 76.6*
b. 83.9
c. 78.2*
d. 83.1
Q11. 86.4, n.r./A.S.
Q12. n.r., n.u./A.S.
Q13. 92.3, n.r./A.S.

Unit I-E
A.S. #2
Q 1a. 48.6*
b. 60.0*
c. 65.7*
d. 65.7*
e. 65.7*
f. 71.4*
g. 60.0*
Q 2a. 54.3*
b. 51.4*
c. 60.0*
d. 57.1*
e. 57.1*
f. 57.1*
g. 45.7*
Q 3a. 48.6*
b. 40.0*
c. 54.3*
d. 51.4*
e. 51.4*
f. 54.3*
g. 51.4*

Unit II-E
Q 1a. 57.1*
b. 95.8
c. 67.8*
d. 84.6
e. 89.5
f. 86.0
g. 79.7*
Q 2a. 86.0
b. 86.0
c. 77.6*
Q 3a. 88.8
b. 96.5
c. 89.5
d. 84.6
e. 89.5
f. 89.5
g. 95.8
h. 89.5
i. 93.7
Q 4a. 73.4*
b. 73.4*
c. 67.8*
Q 5a. 86.0
b. 79.0*
c. 72.0*
d. 66.9*

Q 5e. 53.4*
f. 37.0*
g. 31.0*
Q 6a. 93.0
b. 86.0
c. 78.3*
d. 81.8
Q 7. 65.9*
Q 8a. 65.7*
b. 91.6
c. 93.0
d. 81.8
e. 96.5
Q 9. 65.8*, n.r./A.S.
Q10. 57.1*, n.r./A.S.

Unit II-E
A.S. #1
1. 91.7
2. 91.7
3. 58.3*
4. 91.7
5. 91.7
6. 83.3
7. 41.7*
8. 50.0*
ck 177 69.0*
ck 178 55.2*
ck 173 89.7
ck 174 82.8
ck 175 69.0*
ck 176 75.9*
1st dep 51.7*
2nd dep 44.8*

A.S. #2
Balance 52.0*

Unit III-E
Q 1a. 100
b. 97.5
c. 91.4
d. 96.3
e. 96.3
f. 97.5
g. 88.9
h. 92.6
i. 92.6
j. 97.5
Q 2a. 90.1
b. 67.9*
c. 95.1
d. 92.6
Q 2e. 98.8
f. 72.8*
g. 92.6
h. 84.0
i. 93.8
j. 76.5*
Q 3a. 79.0*
b. 79.0*
c. 69.1*
Q 4a. 92.6
b. 74.1*
c. 80.2*
d. 91.4
e. 70.4*
f. 87.7
g. 91.4
h. 63.0*
i. 67.9*
j. 90.1
k. 87.7
l. 92.6
Q 5a. 93.8
b. 96.3
c. 58.0*
d. 92.6
e. 69.1*
f. 87.7
g. 79.0*
h. 66.7*
i. 96.3
j. 93.8
k. 63.0*
l. 88.9
m. 70.4*
n. 55.6*
Q 6a. 96.3
b. 87.7
c. 46.9*
d. 76.5*
e. 81.5
Q 7a. 79.0*
b. 80.2
Q 8. 100, n.r./A.S.

Unit IV-E
Q 1a. 88.3
b. 98.9
c. 88.3
Q 2. 94.7
Q 3a. 87.2
b. 70.2*
c. 77.7*
d. 71.3*

Q 3e.	96.8
f.	93.6
g.	62.8*
h.	95.7
i.	77.7*
j.	69.1*
k.	93.6
Q 4a.	98.9
b.	98.9
c.	98.9
d.	98.9
Q 5a.	88.3
b.	90.4
c.	86.2
d.	74.5*
Q 6a.	75.5*
b.	79.8*
c.	72.3*
d.	89.4
e.	90.4
Q 7.	83.0
Q 8a.	64.9*
b.	63.8*
c.	72.3*
d.	83.0
e.	89.4
Q 9a.	83.0
b.	85.1
c.	66.0*
d.	95.7
Q10a.	81.9
b.	70.2*
c.	73.4*
d.	74.5*
Q11a.	81.9
b.	71.3*
Q12a.	96.8
b.	100
c.	95.7
d.	96.8
e.	80.9
f.	93.6
g.	75.5*
h.	78.7*
Q13a.	83.0
b.	77.7*
c.	91.5
d.	95.7
e.	93.6
f.	86.2
g.	86.2
h.	87.2
Q14.	100, n.r./A.S.

Unit V-E

Q 1a.	95.5
b.	94.7
c.	93.9
d.	95.5
e.	94.7
f.	95.5
g.	97.0
h.	96.2
Q 2a.	95.5
b.	89.4
c.	87.1
d.	81.8
e.	71.2*
Q 3a.	88.6
b.	72.7*
c.	90.9
d.	88.6
Q 4a.	73.5*
b.	75.8*
c.	55.3*
d.	66.7*
e.	61.4*
f.	53.0*
g.	83.3
h.	48.5*
Q 5a.	91.7
b.	86.4
c.	80.3
d.	67.4*
Q 6a.	80.3
b.	72.7*
c.	58.3*
Q 7a.	87.1
b.	67.4*
c.	86.4
d.	67.4*
e.	72.7*
f.	91.7
g.	90.9
h.	84.8
i.	62.9*
j.	64.4*
k.	91.7
l.	93.2
m.	67.4*
n.	87.1
Q 8a.	79.5*
b.	68.9*
c.	87.9
d.	62.1*
e.	55.3*
f.	68.9*

Q 8g. 87.9
h. 90.2
Q 9a.1) 56.1*
2) 58.3*
b.1) 62.1*
2) 60.6*
c.1) 58.3*
2) 53.0*
d.1) 53.8*
2) 55.3*
Q10. 53.8*
Q11. 81.8

Unit I-F
Q 1a. 96.3
b. 94.5
c. 91.7
Q 2a. 100
b. 96.3
c. 97.2
d. 94.5
e. 67.0*
f. 53.2*
g. 87.2
h. 67.9*
i. 57.8*
j. 78.0*
k. 90.8
l. 94.5
m. 60.6*
n. 43.1*
o. 79.8*
Q 3a. 70.6*
b. 78.6*
Q 4a. 80.7
b. 71.6*
c. 78.9*
d. 64.2*
Q 5a. 67.0*
b. 69.7*
Q 6a. 56.9*
b. 52.3*
c. 40.4*
d. 34.9*
Q 7a. 91.7
b. 58.7*
c. 93.6
d. 60.6*
Q 8a. 81.7
b. 96.3
c. 42.2*
d. 89.9
Q 9a. 91.7
Q 9b. 79.8*
c. 76.1*
d. 82.6
e. 86.2
f. 64.2*
g. 65.1*

Unit I-F
A.S. #1
Q 1. 80.0
Q 2. 93.3
Q 3. 93.3
Q 4. 100
Q 5. 73.3*
Q 6. 100
Q 7. 100
Q 8. 40.0*
Q 9a. 100
b. 100
c. 100
d. 100
e. 100
Q10a. 100
b. 93.3
c. 93.3
d. 93.3
e. 93.3

Unit I-G
Q 1a. 87.9
b. 87.9
c. 84.8
d. 90.9
e. 69.7*
f. 69.7*
g. 87.9
h. 87.9
i. 90.9
j. 90.9
k. 87.9
l. 87.9
m. 87.9
n. 84.8
o. 75.8
p. 90.9
q. 66.7*
r. 69.7*
s. 57.6*
t. 45.5*
u. 54.5*
v. 78.8*
w. 75.8*
x. 72.7*

Q 1y.	54.5*
z.	84.8
aa.	81.8
bb.	87.9
cc.	81.8
dd.	66.7*
ee.	84.8
ff.	69.7*
gg.	84.8
Q 2a.	54.5*
b.	36.4*
Q 3a.	69.7*
b.	72.7*
c.	57.6*
Q 4a.	54.5*
b.	48.5*
c.	45.5*
Q 5a.	84.8
b.	93.9
c.	84.8
d.	97.0
Q 6a.	90.9
b.	87.9
c.	97.0
d.	63.6*
e.	87.9
f.	84.8
g.	90.9
h.	93.9
Q 7a.	15.2*
b.	57.6*
c.	39.4*
d.	87.9
e.	27.3*
f.	48.5*
g.	15.2*
h.	30.3*
Q 3a.	60.6*
b.	57.6*
c.	57.6*

Unit I-H

Q 1a.	73.6*
b.	90.6
c.	84.0
d.	71.7*
e.	80.2
f.	76.4*
g.	64.2*
h.	80.2
i.	58.5*
j.	74.5*
k.	75.5*
Q 11.	67.0*
m.	56.6*
n.	71.7*
o.	66.0*
p.	67.0*
q.	63.2*
r.	69.8*
s.	78.3*
t.	81.1
u.	81.1
v.	71.7*
w.	72.6*
x.	90.6
y.	80.2
z.	78.3*
aa.	84.9
Q 2a.	70.8*
b.	80.2
c.	80.2
d.	87.7
e.	69.8*
f.	89.6
Q 3a.	67.0*
b.	60.4*
c.	54.7*
d.	51.9*
Q 4a.	85.8
b.	88.7
c.	76.4*
d.	88.7
e.	87.7
f.	83.0
g.	88.7
h.	73.6*
i.	61.3*
j.	72.6*
k.	8[illegible]3
l.	4[illegible].5*
m.	52.1*
n.	83.1
o.	70.4*
p.	73.2*
q.	76.1*
r.	76.1*
s.	78.9*
t.	69.0*
u.	87.3
v.	76.1*
w.	81.7
x.	64.8*
y.	73.2*
z.	49.3*
Q 5a.	77.5*

Q 5b.	67.6*
c.	91.5
d.	62.0*
Q 6a.	59.2*
b.	62.0*
c.	66.2*
d.	53.5*
e.	45.1*
f.	53.5*
g.	53.5*
h.	80.3
i.	56.3*
j.	73.2*
k.	46.5*
Q 7a.	47.9*
b.	43.7*
c.	40.8*
Q 8.	30.2*
Q 9.	34.0*
Q10a.	59.2*
b.	46.5*
c.	46.5*
Q11a.	86.8
b.	77.4*
c.	71.7*
d.	77.4*
e.	76.4*
f.	86.8
g.	84.0
Q12a.	58.5*
b.	52.8*
c.	47.2*
Q13.	100, n.r./A.S.
Q14.	100, n.r./A.S.
Q15.	n.r./A.S.

Unit I-H

A.S. #1

Q 1.	100
Q 2a.	90.9
b.	100
c.	100
Q 3a.	100
b.	100

A.S. #2

Q 1.	100
Q 2.	100
Q 3.	100
Q 4.	9.1*
Q 5a.	100
b.	100
c.	100

Unit I-I

Q 1a.	58.5*
b.	84.6
c.	47.7*
d.	76.9*
e.	64.6*
f.	87.7
g.	84.6
h.	76.9*
i.	86.2
j.	67.7*
k.	66.2*
l.	46.2*
m.	86.2
n.	56.9*
o.	76.9*
Q 2a.	92.3
b.	81.5
c.	61.5*
Q 3a.	87.7
b.	83.1
c.	66.2*
d.	93.8
Q 4a.	75.4*
b.	70.8*
c.	66.2*
d.	60.0*
Q 5a.	56.9*
b.	53.8*
c.	43.1*
Q 6a.	95.4
b.	95.4
c.	73.8*
d.	80.0
e.	76.9*
f.	96.9
g.	84.6
h.	78.5*
i.	73.8*
Q 7a.	95.2
b.	87.7
c.	96.9
d.	93.8
e.	66.2*
f.	93.8
g.	90.8
h.	78.5*
i.	53.8*
Q 8a.	95.4
b.	70.8*
c.	84.6
d.	93.8
e.	92.3

Q 8f.	75.4*
g.	73.8*
h.	60.0*
i.	87.7
j.	98.5
Q 9.	n.r./A.S.

Unit I-J

Q 1a.	67.1*
b.	98.6
c.	83.6
d.	80.8
e.	87.7
f.	83.6
g.	93.2
h.	83.6
i.	89.0
j.	91.8
k.	83.6
l.	95.9
m.	87.7
n.	87.7
o.	91.8
p.	93.2
Q 2a.	79.5*
b.	37.0*
c.	79.5*
d.	64.4*
e.	74.0*
f.	86.3
g.	82.2
h.	86.3
i.	91.8
Q 3a.	94.5
b.	84.9
c.	97.3
d.	63.0*
e.	19.2*
f.	78.1*
g.	87.7
h.	89.0
i.	79.5*
j.	78.1*
Q 4a.	97.7
b.	67.4*
c.	88.4
d.	65.1*
e.	88.4
f.	100
g.	95.3
h.	100
Q 5a.	83.6
b.	75.3*
Q 5c.	65.8*
d.	60.3*
Q 6.	100, n.r./A.S.
Q 7.	n.r./A.S.
Q 8.	n.r./A.S.
Q 9.	100, n.r./A.S.
Q10.	n.r./A.S.
Q11.	n.r./A.S.
Q12.	100, n.r./A.S.
Q13.	n.r./A.S.
Q14.	n.r./A.S.
Q15.	n.r./A.S.

Unit I-J
A.S. #7

Q 1.	100
Q 2.	28.6*
Q 3.	100
Q 4a.	100
b.	100
Q 5.	100
Q 6.	100
Q 7.	100
Q 8.	100
Q 9.	100
Q10a.	100
b.	100

Unit I-K

Q 1a.	89.5
b.	94.7
c.	95.6
d.	71.9*
e.	76.3*
f.	86.8
g.	58.8*
h.	92.1
i.	72.8*
j.	75.4*
k.	61.4*
l.	87.7
Q 2a.	89.5
b.	90.4
c.	93.9
d.	96.5
e.	96.5
f.	93.9
Q 3a.	91.2
b.	86.0
c.	98.2
d.	91.2
e.	86.0
Q 4a.	97.4

Q 4b. 95.6
c. 96.5
d. 80.7
Q 5a. 90.4
b. 91.2
c. 94.7
d. 93.9
e. 98.2
f. 92.1
Q 6a. 87.7
b. 77.2*
c. 99.1
d. 100
e. 85.1
f. 95.6
Q 7a. 95.6
b. 73.7*
c. 99.1
d. 88.6
e. 65.8*
f. 97.4
Q 8. 69.2*, n.r./A.S.

Unit I-K
A.S. #1
a. 93.1
b. 94.8
c. 98.3
d. 96.6
e. 96.6
f. 94.8
g. 86.2
h. 94.8
i. 93.1
j. 94.8
k. 100
l. 96.6

A.S. #2
Q 1a. 98.3
b. 98.3
c. 100
d. 98.3
e. 96.6
f. 96.6
Q 2a. 100
b. 98.3
c. 100
d. 100
e. 83.6
f. 95.0

A.S. #3
Q 1a. 93.0
b. 96.5
c. 94.7
d. 94.7
e. 94.7
f. 93.0
g. 98.2
h. 96.5
i. 96.5
j. 94.7
Q 2a. 100
b. 89.5
c. 94.7
d. 96.5
e. 98.2
f. 94.7
g. 98.2
h. 96.5
i. 96.5
j. 98.2
Q 3a. 100
b. 98.2
c. 94.7
d. 96.5
e. 94.7
f. 91.2
g. 98.2
h. 94.7
i. 98.2
j. 96.5

A.S. #4
Part A
Q 1. 98.3
Q 2. 98.3
Q 3. 96.7
Q 4. 96.7
Q 5. 96.7
Q 6. 91.7
Q 7. 91.7
Q 8. 91.7
Q 9. 90.0
Q10. 98.3
Q11. 95.0
Q12. 90.0
Q13. 93.3
Q14. 93.3
Q15. 96.7
Q16. 96.7
Q17. 88.3

Q18.	86.7
Q19.	78.3*
Q20.	81.7
Q21.	70.0*
Q22.	70.0*
Q23.	66.7*
Q24.	83.3
Part B	
Q 1.	93.4
Q 2.	85.2

A.S. #5

Q 1.	98.4
Q 2.	98.4
Q 3.	96.7
Q 4.	95.1
Q 5.	98.4
Q 6.	98.4
Q 7.	95.1
Q 8.	100
Q 9.	98.4
Q10.	98.4
Q11.	98.4
Q12.	93.4
Q13.	98.4
Q14.	93.4
Q15.	93.4
Q16.	88.5
Q17.	100
Q18.	98.4
Q19.	100
Q20.	98.4
Q21.	96.7
Q22.	88.5
Q23.	88.5
Q24.	91.8
Q25.	96.7
Q26.	88.5
Q27.	83.6
Q28.	90.2
Q29.	93.4

A.S. #6

Q 1.	86.9
Q 2.	88.5
Q 3.	100
Q 4.	96.7
Q 5.	93.4
Q 6.	95.1
Q 7.	90.2
Q 8.	95.1
Q 9.	88.5
Q10.	85.2
Q11.	90.2
Q12.	91.8
Q13.	88.5
Q14.	85.2
Q15.	80.3
Q16.	93.4
Q17.	72.1*
Q18.	77.1*
Q19.	85.2
Q20.	93.4
Q21.	93.4
Q22.	86.9
Q23.	75.4*
Q24.	75.4*
Q25.	83.6
Q26.	77.1*
Q27.	77.1*
Q28.	80.3
Q29.	80.3
Q30.	77.1*
Q31.	77.1*
Q32.	68.9*

A.S. #7

Q 1.	100
Q 2.	96.4
Q 3.	98.2
Q 4.	96.4
Q 5.	94.6
Q 6.	98.2
Q 7.	94.6
Q 8.	98.2
Q 9.	64.3*
Q10.	75.0*
Q11.	66.1*
Q12.	87.5
Q13.	91.1
Q14.	71.4*
Q15.	89.3
Q16.	85.7
Q17.	87.5
Q18.	58.9*
Q19.	76.8*
Q20.	75.0*
Q21.	76.8*
Q22.	92.9
Q23.	76.8*
Q24.	75.0*
Q25.	73.2*
Q26.	85.7
Q27.	73.2*
Q28.	76.8*
Q29.	82.1

Q 30. 58.9*
Q 31. 60.7*

A.S. #8
Q 1a. 91.4
b. 89.7
c. 91.4
d. 93.1
e. 87.9
f. 87.9
g. 91.4
h. 93.1
i. 93.1
j. 86.2
k. 86.2
l. 94.8
m. 86.2
n. 77.6*
Q 2a. 81.0
b. 82.8
c. 74.1*
d. 81.0
e. 77.6*
f. 81.0
g. 82.8
h. 79.3*
i. 82.8
j. 82.8
k. 82.8
l. 79.3*
m. 82.8
n. 70.7*
o. 75.9*
p. 72.4*
q. 81.0
r. 65.5*
s. 72.4*
t. 58.6*
Q 3a. 87.9
b. 93.1
c. 89.7
d. 93.1
e. 87.9
f. 91.4
g. 89.7
h. 86.2
i. 93.1
j. 91.4
k. 91.4
l. 93.1
m. 93.1
n. 87.9
o. 86.2
Q 3p. 79.3*
Q 4a. 94.6
b. 92.9
c. 92.9
d. 91.1
e. 94.6
f. 91.1
g. 92.9
h. 92.9
i. 91.1
j. 85.7
k. 96.4
l. 94.6
m. 94.6
n. 89.3
o. 89.3
p. 71.4*
Q 5a. 94.6
b. 89.3
c. 92.9
d. 91.1
e. 92.9
f. 85.7
g. 89.3
h. 89.3
i. 85.7
j. 91.1
k. 92.9
l. 87.5
m. 80.4
n. 80.4
o. 76.8*
p. 76.8*
q. 75.0*

Unit II-K
Q 1a. 57.7*
b. 48.7*
Q 2a. 65.3*
b. 67.3*
c. 68.4*
d. 76.5*
e. 71.4*
f. 71.4*
Q 3a.1) 86.7
2) 92.9
3) 92.9
b.1) 83.7
2) 78.6*
3) 71.4*
c.1) 78.6*
2) 72.4*
3) 73.5*

Q 3d.1)	66.3*
2)	65.3*
3)	67.3*
Q 4a.	90.8
b.	79.6*
c.	96.9
d.	98.0
e.	91.8
Q 5a.	76.5*
b.	95.9
c.	92.9
d.	87.8
e.	95.9
Q 6a.	81.6
b.	87.8
c.	76.5*
d.	80.6
e.	81.6
f.	89.8
g.	84.7
h.	71.4*
i.	82.7
j.	80.6
Q 7a.	94.9
b.	84.7
c.	92.9
Q 8a.	80.6
b.	84.7
c.	83.7
Q 9a.	73.5*
b.	75.5*
c.	73.5*
Q10a.	67.3*
b.	41.8*
c.	63.3*

Unit II-K

A.S. #1

Q 1a.	100
b.	100
c.	94.0
d.	90.5
e.	96.4
Q 2a.	89.3
b.	85.7
c.	88.1
d.	72.6*
e.	77.4*
Q 3a.	78.6*
b.	81.0
c.	77.4*
d.	81.0
e.	83.3
Q 4a.	83.3
b.	81.0
c.	81.0
d.	79.8*
e.	84.0

A.S. #2

Q 1.	94.2
Q 2.	98.8
Q 3.	100
Q 4.	97.7
Q 5.	96.5
Q 6.	93.0
Q 7.	98.8
Q 8.	94.2
Q 9.	79.1*
Q10.	91.9

A.S. #3

Q 1.	93.0
Q 2.	69.8*
Q 3.	74.4*
Q 4.	91.9
Q 5.	89.5
Q 6.	89.5
Q 7.	90.7
Q 8.	80.2
Q 9.	93.0
Q10.	80.2

A.S. #4

Q 1.	78.2*
Q 2.	94.3
Q 3.	79.3*
Q 4.	78.2*
Q 5.	86.2
Q 6.	92.0
Q 7.	74.7*
Q 8.	69.0*
Q 9.	77.0*
Q10.	69.0*

A.S. #5

Q 1.	98.8
Q 2.	84.3
Q 3.	95.2
Q 4.	94.0
Q 5.	91.6
Q 6.	74.7*
Q 7.	80.7
Q 8.	73.5*
Q 9.	77.1*
Q10.	61.4*

A.S. #6

Q 1.	79.7*
Q 2.	84.8
Q 3.	79.7*
Q 4.	70.9*
Q 5.	77.2*
Q 6.	82.3
Q 7.	86.1
Q 8.	82.3
Q 9.	78.5*
Q10.	77.2*

A.S. #7

Part A

Q 1.	97.5
Q 2.	81.5
Q 3.	96.3
Q 4.	97.5
Q 5.	93.8
Q 6.	91.4
Q 7.	91.4
Q 8.	90.1
Q 9.	85.2
Q10.	85.2
Q11.	82.7
Q12.	93.8
Q13.	93.8
Q14.	97.5
Q15.	86.3
Q16.	91.3
Q17.	91.3
Q18.	88.8
Q19.	91.0
Q20.	85.9

Part B

Q 1.	84.2
Q 2.	77.6*
Q 3.	81.6
Q 4.	72.4*
Q 5.	77.6*
Q 6.	68.4*

Unit III-K

Q 1a.	97.5
b.	97.5
Q 2a.	98.8
b.	96.3
c.	81.3
d.	96.3
e.	93.8
f.	81.3
g.	97.5
h.	96.3
Q 2i.	98.8
j.	100
Q 3a.	95.0
b.	93.8
c.	95.0
d.	92.5
e.	93.8
Q 4a.	80.0
b.	76.3*
c.	76.3*
d.	78.8*
e.	73.8*
Q 5a.	91.3
b.	91.3
c.	91.3
d.	90.0
e.	83.8
Q 6a.	95.0
b.	100
c.	98.8
d.	92.5
e.	97.5
f.	86.3
g.	95.0
h.	90.0
i.	88.8
j.	92.5
Q 7a.	62.5*
b.	58.8*
c.	68.8*
d.	50.0*
e.	43.8*
f.	58.8*
g.	46.3*
h.	55.0*
i.	51.3*
j.	62.5*
Q 8a.	50.0*
b.	66.3*
c.	60.0*
d.	58.8*
e.	62.5*
f.	63.8*
g.	65.0*
h.	67.5*
i.	43.8*
j.	56.3*
Q 9a.	70.0*
b.	77.5*
c.	57.5*
d.	71.3*
e.	77.5*
f.	71.3*

Q 9g.	48.8*	
h.	47.5*	
i.	60.0*	
j.	46.3*	
Q10a.	92.5	
b.	90.0	
c.	86.3	
d.	86.3	
e.	68.8*	
Q11a.	91.3	
b.	86.3	
c.	91.3	
d.	90.0	
e.	81.3	
Q12.	Fractions	40.0*
	Decimals	66.3*
	Percents	70.0*

Unit III-K

A.S. #1

Q 1a.	100
b.	97.9
c.	100
Q 2a.	97.9
b.	95.7
Q 3a.	91.5
b.	97.9
c.	97.9

A.S. #2

Q 1a.	100
b.	95.5
c.	95.5
d.	93.9
e.	100
f.	78.8*
g.	95.5
h.	90.9
i.	84.8
j.	83.3
k.	93.9
l.	92.4
m.	86.4
n.	98.5
o.	86.4
Q 2a.1)	100
2)	100
3)	100
4)	100
5)	100
b.1)	100
2)	100
3)	100
Q 2b.4)	100
5)	100

A.S. #3

Q 1a.	84.4
b.	84.4
c.	86.0
d.	82.8
Q 2a.	96.9
b.	95.3
c.	82.8
d.	82.8
e.	85.9
f.	73.4*
g.	89.1
h.	71.9*
i.	76.6*
j.	59.4*

A.S. #4

Q 1.	98.4
Q 2.	88.9
Q 3.	95.2
Q 4.	98.4
Q 5.	88.9
Q 6.	90.5
Q 7.	90.5
Q 8.	96.8
Q 9.	95.2
Q10.	88.9
Q11.	95.2
Q12.	95.2
Q13.	90.5
Q14.	95.2
Q15.	96.8
Q16.	71.4*
Q17.	92.1
Q18.	73.0*
Q19.	95.2
Q20.	95.2

A.S. #5

Q 1a.	95.2
b.	98.4
c.	98.4
d.	98.4
e.	93.5
f.	95.2
g.	75.8*
h.	85.5
i.	85.5
j.	96.8
Q 2a.	98.4

Q 2b.	72.6*
c.	82.3
d.	98.4
e.	59.7*
f.	69.4*
g.	74.2*
h.	64.5*
i.	74.2*
j.	71.0*

A.S. #6

Q 1a.	98.3
b.	100
c.	90.3
d.	78.0*
e.	84.7
f.	67.8*
g.	91.5
h.	88.1
i.	72.9*
j.	91.5
Q 2a.	96.6
b.	96.6
c.	94.9
d.	96.6
e.	96.6
f.	96.6
g.	91.5
h.	96.6
i.	96.6
j.	96.6

A.S. #7

Q 1a.	98.3
b.	96.6
c.	98.3
d.	94.8
e.	86.2
f.	87.9
g.	89.7
h.	74.1*
i.	81.0
j.	72.4*
Q 2a.	100
b.	100
c.	86.2
d.	96.6
e.	100
f.	100
g.	84.5
h.	89.7
i.	89.7
j.	89.7

A.S. #8

Q 1a.	100
b.	100
c.	98.3
d.	100
e.	98.3
f.	86.4
g.	100
h.	98.3
i.	98.3
j.	88.1
k.	96.6
l.	98.3
m.	96.6
n.	98.3
o.	98.3
p.	88.1
q.	96.6
r.	96.6
s.	98.3
t.	98.3
Q 2a.	100
b.	100
c.	100
d.	91.5
e.	93.2
f.	94.9
g.	91.5
h.	94.9
i.	94.9
j.	94.9
k.	88.9
l.	98.3
m.	83.1
n.	89.8
o.	88.1
p.	93.2
q.	83.1
r.	96.6
s.	94.9
t.	93.2

A.S. #9

Q 1.	90.7
Q 2.	92.6
Q 3.	88.9
Q 4.	87.0
Q 5.	90.7
Q 6.	88.9
Q 7.	92.6
Q 8.	90.7
Q 9.	90.7
Q10.	88.9

Q11. 90.7
Q12. 94.4
Q13. 88.9
Q14. 92.6

Unit IV-K
Q 1a. 78.1*
b. 63.8*
c. 63.8*
d. 73.3*
e. 67.6*
f. 72.4*
g. 67.6*
Q 2a. 71.4*
b. 71.4*
c. 69.5*
d. 66.7*
e. 58.1*
f. 41.0*

Unit IV-K
A.S. #1
Q 1a. 97.7, n.u.
b. 97.7, n.u.
c. 97.7, n.u.
d. 95.5, n.u.
e. 86.4, n.u.
Q 2a. 93.2
b. 90.9
c. 84.1
Q 3a. 98.3
b. 96.6
Q 4a. 96.6
b. 94.8
c. 96.6
d. 86.2
Q 5a. 100
b. 100
c. 100
d. 100
e. 91.4
Q 6a. 93.2, n.u.
b. 95.5, n.u.
c. 93.2, n.u.
d. 90.9, n.u.
e. 88.6, n.u.
f. 95.5, n.u.
g. 93.2, n.u.
h. 93.2, n.u.
Q 7a. 97.7, n.u.
b. 97.7, n.u.
c. 90.9, n.u.
d. 81.8, n.u.
Q 8a. 93.2, n.u.
b. 90.9, n.u.
c. 93.2, n.u.
Q 9a. 97.7, n.u.
b. 93.2, n.u.
c. 95.5, n.u.
d. 93.2, n.u.
e. 90.9, n.u.
f. 93.2, n.u.
Q10a. 86.2
b. 84.5
c. 75.9*
d. 89.7
e. 87.9
f. 94.8
g. 84.5
h. 94.8
i. 84.5
j. 91.4
k. 55.2*
Q11a. 93.2, n.u.
b. [illegible].5, n.u.
c. 88.6, n.u.
d. 93.2, n.u.
Q12. 62.1*

A.S. #2
Q 1. 83.9
Q 2. 80.4
Q 3. 73.2*
Q 4. 83.9
Q 5. 91.1
Q 6. 76.8*
Q 7. 89.3
Q 8. 42.9*
Q 9. 82.1
Q10. 89.3
Q11. 76.8*
Q12. 78.6*
Q13. 71.7*
Q14. 73.2*
Q15. 67.9*

A.S. #3
Q 1. 89.3
Q 2. 85.7
Q 3. 85.7
Q 4. 85.7
Q 5. 85.7
Q 6. 94.6
Q 7. 92.9
Q 8. 83.9
Q 9. 94.6

Q10. 94.6
Q11. 94.6
Q12. 82.1
Q13. 83.9
Q14. 75.0*
Q15. 92.9

Unit V-K
Q 1a. 100
b. 81.0
c. 81.0
Q 2a. 81.0
b. 81.0
c. 85.7
d. 95.2
Q 3a. 90.5
b. 81.0
c. 100
d. 81.0
e. 90.5
f. 95.2
g. 90.5
h. 90.5
i. 90.5
j. 95.2
Q 4a. 95.2
b. 90.5
c. 76.2*
d. 71.4*
e. 61.9*
Q 5a. 100/A.S.
b. 94.7/A.S.

Unit V-K
A.S. #1
Q 1a. 95.0
b. 100
c. 90.0
d. 100
Q 2a. 100
b. 100
c. 100
d. 95.0
e. 100
f. 100
g. 100
h. 80.0
i. 45.0*
Q 3a. 100
b. 100
c. 100
d. 100
e. 100

Q 4. n.u.

A.S. #2
Q 1a. 100
b. 100
c. 95.2
d. 95.2
e. 100
f. 85.7
g. 76.2*
h. 95.2
i. 90.5
j. 85.7
k. 95.2
l. 57.1*
m. 100
n. 85.7
o. 100
Q 2a. 95.2
b. 100
c. 95.2
d. 100
e. 100
Q 3. 85.7
Q 4a. 95.2
b. 90.5
c. 100
d. 81.0
e. 42.9*
Q 5a. 85.7
b. 90.5
c. 61.9*
d. 23.8*
e. 85.7
Q 6a. 95.2
b. 33.3*
c. 47.6*
d. 85.7
e. 100
Q 7a. 100
b. 85.7
c. 90.5
d. 85.7
e. 90.5
f. 95.2
g. 90.5
h. 100
Q 8a. 95.2
b. 95.2
c. 85.7
d. 100
e. 90.5
f. 100

Q 9a.	100
b.	95.2
c.	90.5
d.	100
e.	95.2
f.	90.5
g.	90.5
h.	90.5
i.	95.2
j.	95.2
k.	100
l.	100
m.	100
n.	100
o.	100
p.	100
q.	95.2
r.	100
s.	95.2
t.	100
Q10a.	100
b.	100
c.	100
d.	81.0
e.	95.2
f.	100
g.	95.2
h.	85.7
i.	100
j.	100
k.	100
l.	90.5

OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
FRANCIS TUTTLE, DIRECTOR • 1515 WEST SIXTH AVE., • STILLWATER, OKLAHOMA 74074 • A.C. (405) 377-2000

September 14, 1979

Dear Coop Teacher-Coordinator:

The State Department of Vocational and Technical Education hopes the Interdisciplinary Cooperative Education curriculum guide will be of great assistance to you in your teaching experiences. We feel that the validity of the content is assured because of the extensive use of validation committees throughout the development of this manual. However, we recognize the need for validation of the manual in terms of student achievement. Therefore, we are administering a research study to see if the manual is helping the student to meet the designated performance objectives.

The Research Coordinating Unit of the State Department of Vocational and Technical Education is in the process of selecting teachers to participate in the validation. Selection of teachers will be partially based on the units that will be taught during the 1979-80 school year and the approximate dates they will be taught.

Enclosed you will find a copy of the ICE table of contents. Please take a few minutes to list the approximate dates you plan to teach each unit. In order to facilitate the research study, we are asking that you return the enclosed table of contents by September 26, 1979. A self-addressed, stamped envelope is provided for your convenience.

Your input in this study is extremely important and necessary for any future revisions. Should you be selected, you may rest assured that the recordkeeping will be minimal. We are looking forward to hearing from you.

Sincerely,

Sheila Stone

Sheila Stone, Assistant Coordinator
Research Coordinating Unit

Tom Worley

Tom Worley, Coop Curriculum Specialist
Curriculum and Instructional Materials Center

Enclosure

INTERDISCIPLINARY COOPERATIVE EDUCATION

Table of Contents

		Approx. Teaching Date
Section A--Orientation		
Unit I	Orientation to Cooperative Programs	_____
Unit II	Vocational Student Organizations and Parliamentary Procedure	_____
Unit III	Leadership Development and Civic Responsibility	_____
Section B--Health and Safety		
Unit I	Health and Safety	_____
Section C--Human Relations		
Unit I	Human Relations and Self-Improvement	_____
Unit II	Relationships with Other People	_____
Unit III	Coping with Problems	_____
Section D--Communications		
Unit I	Oral Communications	_____
Unit II	Written Communications	_____
Section E--Management of Self and Resources		
Unit I	Managing Resources	_____
Unit II	Personal Banking Procedures	_____
Unit III	Obtaining and Using Credit and Loans	_____
Unit IV	Insurance	_____
Unit V	Buying a Car	_____
Section F--Legal Aspects of Employment		
Unit I	Basic Law for Business and Consumers	_____
Section G--Labor Unions		_____
Unit I	Labor Unions	_____
Section H--Economics		
Unit I	Economics of Free Enterprise	_____
Section I--Career Planning		
Unit I	Career Planning	_____
Section J--Preemployment		
Unit I	Job Application and Interview	_____

Section K--Basic Skills

Unit I	Whole Numbers	_____
Unit II	Decimals	_____
Unit III	Fractions and Percent	_____
Unit IV	Wages	_____
Unit V	Using Written Resources	_____

Instructor's Name: _____

School Address: _____

_____

_____

Return to: Sheila Stone, Assistant Coordinator
Research Coordinating Unit
Oklahoma State Department of Vocational and Technical Education
1515 West Sixth Avenue
Stillwater, OK 74074

OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
FRANCIS TUTTLE, DIRECTOR • 1515 WEST SIXTH AVE., • STILLWATER, OKLAHOMA 74074 • A.C. (405) 377-2000

October 9, 1979

MEMORANDUM

TO: Area School Administrators and Local Directors

FROM: Sheila Stone, Assistant Coordinator
Research Coordinating Unit

SUBJECT: Field Tests of Curriculum Manuals

The Curriculum and Instructional Materials Center and the Research Coordinating Unit of the State Department of Vocational and Technical Education are conducting field tests of the following curriculum manuals: Welding, Auto Mechanics I, Drafting, Health Services Careers, Nursing I, Family Living, Occupational Child Care, Agriculture Livestock Skills, Vocational Agriculture IV, and Interdisciplinary Cooperative Education. The purpose of these field tests is two-fold: 1) to validate the manuals in terms of student achievement of the performance objectives as stated in the curriculum and 2) to gather input from instructors to use in future revisions of these manuals.

Enclosed please find a copy of the letter which has been sent to all Oklahoma auto mechanics instructors. Similar letters have been sent to instructors using the other nine manuals. Due to an oversight, you were not notified of this project beforehand. We hope this has not caused you any inconvenience. Your support of this project is vital for its success.

We are in the process of selecting teachers for the field tests and would appreciate any encouragement you could give to your instructors to participate. In developing the procedures, we tried to work out a process that would not increase the teacher's workload. The assumption was made that the tests would be administered as they are in the manuals and that these tests would be graded item by item. The information we need on a student is his or her ability to answer a given item correctly. Therefore, we need to obtain the student tests graded to indicate right or wrong answers on each test item. Teachers may add or delete test questions, weight the items for a total score, or use any other procedures they normally use in testing. Each student will be assigned a number by the teacher to be used throughout the field test. The student should write that number in the upper left corner of the test instead of her or his name. Each school will also be assigned a number to be used for identification purposes.

Teachers will be asked to participate on approximately six units. A self-addressed, postage-paid envelope will be provided for each unit. A teacher evaluation form will also be provided for each of the six units. This form should take no more than five or ten minutes to complete and will be invaluable to the Curriculum and Instructional Materials Center in the development and revision of future manuals. A copy of this evaluation form will be sent to you as soon as it is available.

I hope this explanation will give you sufficent information about the project. If you have any questions, please feel free to call me at the State Department.

cc: Regional Administrators

SS/7626/10

OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
FRANCIS TUTTLE, DIRECTOR • 1515 WEST SIXTH AVE., • STILLWATER, OKLAHOMA 74074 • A.C. (405) 377-2000

MEMORANDUM

TO:

FROM: Sheila Stone, Assistant Coordinator
Research Coordinating Unit

Thank you for agreeing to participate in the validation of the Interdisciplinary Cooperative Education manual. Without your cooperation, this study could not be done.

In developing the procedures, we tried to work out a process that would not increase your workload. The assumption was made that the tests would be administered as they are in the manual and that these tests would be graded item by item. The information we need on a student is his or her ability to answer a given item correctly. Therefore, we need to obtain the student tests graded to indicate right or wrong answers on each test item. You may add or delete test questions, weight the items for a total score, or use any other procedures you normally use in testing. We are also asking that you indicate the student's performance on each assignment and job sheet. These performance objectives are listed at the end of each test.

An item by item analysis will be made from all student tests. Those items answered correctly by most of the students will indicate that the items are properly covered in the manual. Those items which the majority of the students answer wrong will indicate specific weaknesses in the manual. The school and students will be assigned numbers for identification purposes; no names will be recorded. All tests and assignment sheets will be returned to you.

A self-addressed, postage-paid envelope will be provided for each unit. The label in the lower corner of the envelope indicates what components of that unit need to be sent to us. In most cases, we require only the tests and completed evaluation form.

The steps to follow for field testing the units are attached for your convenience. We have also included a table of contents that specifies which units you will be validating. Keep these sheets available for future reference.

Thank you again for your cooperation. I would be happy to answer any questions you may have as the field testing progresses. Feel free to call or write to me at any time.

SEE OKLAHOMA FIRST

We would appreciate your participation on the following units. Also, if you have access to any of the unit tests given in August, September, or October please write the school number and student number on each one and send them in the extra envelope provided. Any inconvenience you may experience now should result in quality curriculum manuals and will benefit all of the programs in the future. Thanks again for helping us.

INTERDISCIPLINARY COOPERATIVE EDUCATION

Table of Contents

		You are responsible for:
Section A--Orientation		
Unit I	Orientation to Cooperative Programs	_____
Unit II	Vocational Student Organizations and Parliamentary Procedure	_____
Unit III	Leadership Development and Civic Responsibility	_____
Section B--Health and Safety		
Unit I	Health and Safety	_____
Section C--Human Relations		
Unit I	Human Relations and Self-Improvement	_____
Unit II	Relationships with Other People	_____
Unit III	Coping with Problems	_____
Section D--Communications		
Unit I	Oral Cummunications	_____
Unit II	Written Communications	_____
Section E--Management of Self and Resources		
Unit I	Managing Resources	_____
Unit II	Personal Banking Procedures	_____
Unit III	Obtaining and Using Credit and Loans	_____
Unit IV	Insurance	_____
Unit V	Buying a Car	_____
Section F--Legal Aspects of Employment		
Unit I	Basic Law for Business and Consumers	_____
Section G--Labor Urions		
Unit I	Labor Unions	_____

Section H--Economics

Unit I	Economics of Free Enterprise	_____

Section I--Career Planning

Unit I	Career Planning	_____

Section J--Preemployment

Unit I	Job Application and Interview	_____

Section K--Basic Skills

Unit I	Whole Numbers	_____
Unit II	Decimals	_____
Unit III	Fractions and Percent	_____
Unit IV	Wages	_____
Unit V	Using Written Resources	_____

STEPS TO FOLLOW WHEN FIELD TESTING UNITS

1. Assign each student a number (between 1 and 99) to be used throughout the field test. The school number and student number should be written in the upper left corner of the first page of the test and on any assignment sheet we may request. Your school number is ☐

2. Teach the unit in your normal manner.

3. Administer the unit test from the curriculum manual.

4. Check (✓) each incorrect item on the test, preferably in red.

★ 5. Mark the performance items listed at the end of each test as follows:

   a. Mark "OK" on the performance objectives the student performed satisfactorily.

   b. Check (✓) those items that were not performed satisfactorily.

   c. Write "Not Used" or "Group Activity" where applicable.

6. Complete the unit evaluation form. Please be specific in your comments. This is your opportunity to tell what you like or dislike about the unit. We welcome your opinions.

7. Mail tests and unit evaluation form to our office, using our return envelope. We will record the data and mail the tests back to you within two weeks after we receive them. The evaluation form will be used by the Curriculum and Instructional Materials Center for future revisions.

UNIT EVALUATION FORM

School Number_____ Unit Name_____

We need your help? Is the CIMC curriculum material useful in meeting your program objectives? What needs to be improved? How can we improve it? What needs to remain the same?

Did you use:	Please check the appropriate column below			Directions: Please comment on each component with regard to your major reasons for using or not using that part of the unit. If your reason corresponds with one of the statements on the attached sheet, place the number of the statement in the space provided.	
	Yes	No	In Part	Statement Number	OTHER COMMENTS
Unit of Instruction					
Objectives Page					
Suggested Activities					
Information Sheets					
Transparencies					
Assignment Sheets					
Answers to Assignment Sheets					
Job Sheets					
Test					
Answers to Test					

What are the most needed changes in this unit? What suggestions do you have for making the changes?_____

The Oklahoma State Department of Vocational and Technical Education does not discriminate on the basis of race, creed, color, national origin, sex, age, veteran status, qualified handicap or disability.

Examples of Constructive Comments

Note: We need constructive feedback if we are to improve CIMC products. It is very important that we know <u>why</u> something is acceptable or not acceptable.

1. Effective in helping students to learn
2. Ineffective in helping students to learn

3. Facilities and equipment readily available or unnecessary
4. Facilities and equipment unavailable or inappropriate

5. Too elementary for student; too easy
6. Too advanced for student; too difficult

7. Lack available resources (e.g. films, supplementary materials, budget)
8. Have adequate or abundant resources

9. Have better materials available
10. Is the best available material

11. Incomplete
12. Complete

13. Current/up-to-date
14. Out-of-date/behind the times

15. Written in logical order; well-sequenced
16. Not logically written; sequencing poor

17. Thought-provoking
18. Unstimulating/unimaginative

19. Motivating
20. Unmotivating

21. Needed for successful employment
22. Unnecessary

23. Biased/stereotyped
24. Unbiased/not stereotyped

25. Easy for teacher to use
26. Difficult for teacher to use

27. Confident of technical knowledge myself
28. Lack technical knowledge/background/work experience

OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
FRANCIS TUTTLE, DIRECTOR • 1515 WEST SIXTH AVE., • STILLWATER, OKLAHOMA 74074 • A.C. (405) 377-2000

April 1, 1980

MEMORANDUM

TO:

FROM: Sheila Stone, Assistant Coordinator
Research Coordinating Unit

JUST A REMINDER . . . . .

that we still need your cooperation in the Interdisciplinary Cooperative Education field test. This field test is being conducted now so that you will have quality materials for your program in the years to come. Won't you please help us help you???

The steps to follow when field testing the units are listed below. You should have received the return envelopes and unit evaluation forms in the past few months. If you have any questions or comments, please don't hesitate to call me at (405) 377-2000, extension 251. Thank you!!!

1. Assign each student a number (between 1 and 99) to be used throughout the field test. The school number and student number should be written in the upper left corner of the first page of the test and on any assignment sheet we may request. Your school number is _____.

2. Teach the unit in your normal manner.

3. Administer the unit test from the curriculum manual.

4. Check (√) each incorrect item on the test, preferably in red.

5. Mark the performance items listed at the end of each test as follows:

   a. Mark "OK" on the performance objectives the student performed satisfactorily.

   b. Check (√) those items that were not performed satisfactorily.

   c. Write "Not Used" or "Group Activity" where applicable.

6. Complete the unit evaluation form. Please be specific in your comments. This is your opportunity to tell what you like or dislike about the unit. We welcome your opinions.

7. Mail tests and unit evaluation form to our office, using our return envelope. We will record the data and mail the tests back to you within two weeks after we receive them. The evaluation form will be used by the Curriculum and Instructional Materials Center for future revisions.

EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER